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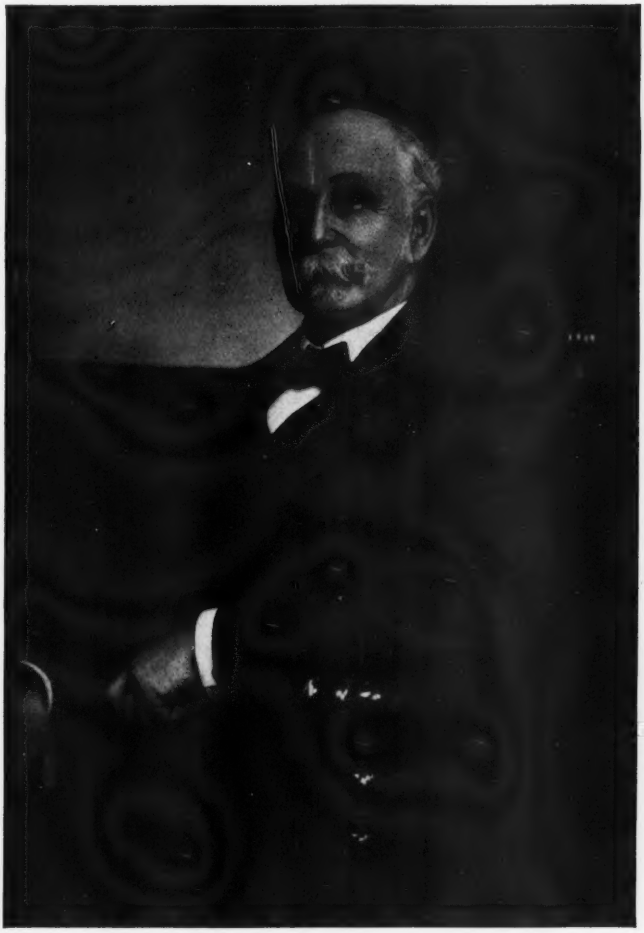

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THE
DENTAL DIGEST

Vol. XXV MARCH, 1919 No. 3

A METHOD FOR SECURING STABILITY OF LOWER DENTURES

RUSSELL W. TENCH, D.D.S., NEW YORK, N. Y.

The object of this article is to present a simple technic for obtaining accurate adaptation and determining the outline form of full lower impressions taken in modelling compound.

For those who are not familiar with the technic described in "Professional Denture Service," the technic there given for the lower impression will be outlined in this article up to the point where "Muscle Trimming" is usually commenced.

It is assumed that an upper compound base impression, with a bite rim attached, or a base plate of a hard material as a swaged metal base or

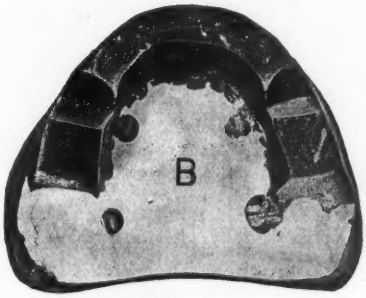


Fig. 1

Dentsply Baseplate Composition adapted to a cast made from a good impression of the upper mouth has been prepared. Whether a baseplate or a base impression is used, the upper bite rim should be constructed so that it is parallel to the plane of occlusion, and so that it is as short or shallow as it can be made and have sufficient depth to permit of cutting two notches in the bicuspid region of the occlusal surface thereof. The bite rim should end at the distal side of the second molar. If a swaged or Baseplate Composition base is used, the bite rim may be of either wax or compound (Fig. 1).

Take a lower tray long enough to reach to the fleshy protuberance found at the posterior limit of the lower ridge. Cut away the labial flange

of the tray so that the labial portion of the lower ridge is exposed to view when the tray is formed to the ridge; also shorten the anterior lingual flange of the tray to prevent it from impinging on the frenum linguae when the tray is in place. Now flatten the bicuspid molar sections of the tray till the margins of the tray cannot touch the sides of the ridge at any point when the tray is seated on the crest of the ridge. Conform the tray to the anterio-posterior curvature of the ridge (Fig. 2).

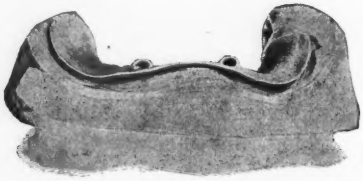


Fig. 2

With compound in the form of a tracing stick, and softened over the flame, trace four lines of compound, about $\frac{3}{16}$ inch in diameter and $\frac{3}{4}$ inch long on the posterior ends of the buccal and lingual flanges of both heels of the tray (Fig. 3A).

Temper the compound tracings in water at about 150 degrees F., insert the tray in the mouth, locate it properly over the ridge and with gentle pressure seat the compound flanges on the ridge, but do not let the center

Fig. 3A

Fig. 3B

portion of the tray come into contact with the top of the ridge, so that a space of $\frac{1}{16}$ inch exists between the crest of the ridge, and the under surface of tray. Remove from the mouth carefully, and chill the rims of compound, which are called guide rims, in cold water (Fig. 3B).

Trace a mass of compound in the center of the incisor section of the tray, and after tempering in hot water seat the tray using the hard guide rims on the distal portion of the tray as a guide; make pressure on the

portion of the tray to which the guide rims are attached when seating it. Remove the tray from the mouth and chill in cold water, then return it to the mouth and test. If the preceding steps have been correctly done the tray should find a definite location on the ridge and have stability when pressure is made on it in the bicuspid region (Fig. 4).

The next step consists of adding a shallow bite rim to the upper side of the lower tray. Dry the upper surface of the tray and on it paint a thin film of compound made fluid by heating over the flame, to afford a better attachment for the bite rim. Form a small roll of compound about the diameter of an ordinary lead pencil, or a trifle larger, and make a bite rim that will be long enough to reach only to the probable location of the distal side of the first molar on each side of the tray. Heat the under side of the soft roll of compound in a small bunsen flame and attach it to the top of the tray, quickly moulding it into a wedge-shaped form with the broad base of the wedge against the tray. It is important that the bite rim be quite soft before carrying into the mouth, and if it has hardened in

Fig. 4

the process of forming it should be softened in a small bunsen flame and tempered in water at a temperature of 150 degrees F.

Insert the prepared tray and soft bite rim attached into the mouth, and seat in correct relation to the lower ridge, holding it there with the first fingers pressing downward against the tray and base of the bite rim in the bicuspid region. Instruct the patient, who has been previously taught how to do this, to touch the tip of the tongue against the heel of the upper base impression or bite plate, as the case may be, and close the mouth. Let the patient close as far as is possible, in order to have the bite rim as shallow as the relations of the posterior parts of the upper bite impression or bite plate and the lower tray will permit. Chill the bite rim thoroughly, in situ, then remove from the mouth and trim away all surplus compound that has worked up against the labial or palatal aspects of the upper bite rim. Also trim the lower rim for length so that it will

not reach beyond the location of the distal side of the lower first molar. A picture of the tray and bite rim at this stage is shown in Fig. 5.

The occlusal surface of the lower bite rim shows the two edges of compound formed in the notches, previously cut in the occlusal surface of the upper bite rim, as referred to in the third paragraph of this article. The forming of these notches is part of the technic of forming the upper bite rim, but their form, location, and direction can be judged from this illustration. When the bite rim is trimmed, it should have a flat occlusal form broken only by the wedges in the bicuspid region which fit into the notches of the upper bite rim.

The success of the subsequent technic for taking the lower impression will depend largely on the following factors: On the amount of freeway* that has been left between the upper and lower bite rims; the more the better; on the use of as much surplus compound as the operator can con-

Fig. 5

veniently introduce into the mouth, usually at least twice as much as would be needed for an ordinary muscle-trimmed impression; on the manner in which the compound is disposed on the tray; on the softness of the compound, since it should be as soft as it is possible to carry it into the mouth without burning the patient or wiping it from the tray in passing it into the mouth; and lastly upon the celerity with which the patient correctly carries out the instructions of the operator.

It is always advisable to instruct the patient in her part of the technic before proceeding to the actual operation. This consists of closing the mouth as far as possible with the tip of the tongue touching the median portion of the rear of the upper base plate or base impression, and drawing the air out of the oral cavity till a partial vacuum is formed, allowing the pressure of the outside atmosphere to force the buccal and labial tissues inward, and the muscles of the floor of the mouth and tongue upward and outward against the bucco-labial and lingual sides of the impression ma-

*"Freeway" is the space between the occlusal surfaces of the upper and lower bite rims when the jaw is relaxed, as in rest. This is the normal rest position.

terial. This technic results in moulding soft compound intimately against the hard portion of the lower ridge as well as displacing soft fascia or floating tissue evenly and correctly against the alveolar ridge. It produces a maximum intimate adaptation and "suction" with the greatest comfort to the patient.

When instructing the patient, have the upper impression or bite plate in the mouth and use the lower impression prepared as in Fig. 3B, as if the impression compound were attached. Be very sure that the patient does not attempt to drop the jaw in trying to exhaust the air from the mouth; this is a natural tendency, and will result in an imperfect impression if it is done when the impression is being taken. Biting pressure must be made and maintained throughout the time that the vacuum is created, a space of about four seconds. The withdrawing of air is discontinued and biting pressure is continued, but with the muscle tension slightly relaxed while the impression is being chilled.

Fig. 6

To proceed with the actual operation first place the upper bite impression or bite plate in position, take a quantity of compound from the heating dish, attach it to the tray and conform it so that the greatest bulk of material is placed in the region of the bicuspids and molars, with about one-half as much bulk in the cuspid and incisor regions as in Fig. 6. Shape this to approximate roughly the form anticipated for the finished impression. Heat the under surface of the compound, which at this stage should be thoroughly soft throughout, till it is glazed and fluid. Touch the compound to the surface of the hot water to temper it. Rapidly place it in the mouth, have the patient close and then guide the wedges on the occlusal surface of the lower bite rim into the notches of the upper bite rim. When the closing is finished, place the index finger between the check and bite rim and pack the compound gently against the buccal and labial sides of the ridge. Now have the patient bring the lips together and suck, or exhaust the air from the oral cavity. While the patient is

doing this make gentle pressure downward and against the cheek and lip tissues to aid in adapting the impression material. Chill the impression and when sure that it is stone hard it may be removed from the mouth and immersed in cold water for a minute or two before trimming away the surplus to the finished outline form. An illustration of a lower impression at this stage is shown at Fig. 7.

When an impression is made after the method just outlined, it is taken with the mouth closed and is muscle trimmed for that position. If the flanges of the impression are trimmed thin and not altered for vertical length they will interfere with the freedom of muscular action when the mouth is wide open, and more often than not the effect of the muscle strain on the periphery of the finished denture will render the denture useless, either because of the irritation which results or due to the fact that the denture will not stay in position during speech or mastication.

A lower impression or denture will exhibit maximum retention when trimmed down till it does not extend on to tissue that may exert strain or

Fig. 7

tension on its periphery. The muscles attached to the mylohyoid ridge and the genial tubercles on the lingual side of the lower ridge and the muscles attached to the buccal side of the ridge at or above the external oblique line are very active in displacing lower dentures. Experience has taught that an operator who is able to learn the location of these anatomical structures may resort to knife-trimming his impressions of the lower ridge with more certain and uniform results than can be obtained when muscle action on compound is used.

The lingual flange of the lower impressions will be properly trimmed in the region of the genial tubercles, to which the frenum linguae is attached, if allowed to remain as removed from the mouth, though it sometimes happens that if soft tissue is attached to the crest of the lower ridge and extends from this location to the tongue muscle, adaptation may be

weak in this area, in which case a slight addition of tracing stick compound will be necessary to a close fit.

The mylohyoid ridge may be located by passing the tip of the finger along the inner side of the ridge from the cuspid backward; this ridge usually leaves its imprint in the impression (See Fig. 8). The impression, when finished, should not extend below it if the alveolar area is flat and should not extend more than a millimeter or so below it if the ridge has excellent shape.

The location of muscle attachment to the region of the external oblique line may be ascertained by placing the tip of a finger at any position along the lower margin of the alveolar ridge, and pulling upward with the fingers of the free hand on the muscles of the cheek. The muscles will exert no pressure on the tip of the finger if it does not extend below the external oblique line. The posterior part of the external oblique ridge usually makes a slight depression in the distal part of the buccal flange of the lower impression. This depression is ordinarily located about mid-

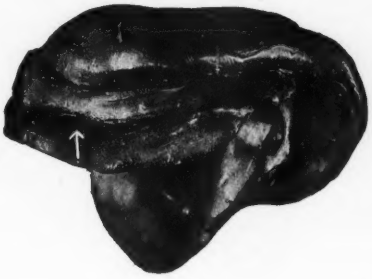


Fig. 8

Fig. 9

way between the edge of the untrimmed lower impression and the crest of the ridge, though slightly nearer the former (See Fig. 9).

Preliminary trimming of the impression should remove all surplus material up to a line about $\frac{1}{16}$ inch below the point at which the mylohyoid ridge touches the impression on the lingual, and up to within the same distance from the depression on the buccal side. The lingual flange should be left with a uniform marginal thickness of almost $\frac{1}{8}$ of an inch. The buccal flange should be trimmed laterally so that it will not extend out into the cheek or lip more than a millimeter beyond the vertical outline of the mandible. When the trimming is completed the edge of the buccal flange of the impression should be of a rounding, cylindrical shape, especially in the second and third molar regions. The preliminary trimming completed, a test should be made to ascertain how much suction the

impression has. In a vast majority of cases it will be found that the suction is much improved by this trimming.

Occasionally it will be necessary to trace material on to the heel of the impression to extend it back on to the soft tissue at the posterior of the lower ridge. Suction cannot be secured if the heels of the impression end on hard tissue, as the valve formed on hard areas is too delicate to prevent air from entering under the impression and breaking the retention when a slight shifting of the denture occurs.

Final trimming may be done on a $\frac{3}{4}$-inch section of the posterior part of the buccal impression flange first, and when complete a test for retention should be made. If the test proves this is still good, the index finger of one hand is laid lightly across the upper surface of the bite rims and the muscle of the cheek opposite the trimmed section is grasped between the thumb and first finger of the free hand and the muscle is stretched upward and inward till it is making a maximum strain on the trimmed flange. If the pull of the muscle moves the impression or breaks suction, carefully scrape the flange till straining the muscle fibres will not cause them to impinge on the margin of the impression. Should the first test disclose

Fig. 10

that the suction has been interfered with, this will indicate that the trimming has been carried too far and compound may be added from a tracing stick and the defect corrected, from which point proceed to trim again, if the addition traced on is too great. When the first section of say about an inch in lineal extent has been trimmed to the final outline, proceed to trim a similar section in front of the one last finished, then test for muscle strain and proceed in this manner till the whole buccal rim is finished.

In trimming the lingual flange, one is guided entirely by finger examination. To detect an over-extended lingual flange place the index finger in contact with the tissue below the flange and draw the finger upward, raising the impression as the finger raises till the finger feels the mylohyoid ridge. The flange is too long if the finger travels any perceptible distance upward before coming into contact with the ridge. The

edge of the flange should terminate at the level of the most prominent part of the ridge (Fig. 10).

Points of weak adaptation may be located by pumping the impression up and down till bubbles are formed, these bubbles escaping where the adaptation is most imperfect; incomplete adaptation may usually be corrected by judicious use of the tracing stick, employing the technic given in Professional Denture Service, Page 149.

By following the technic outlined in this article the writer has been able to obtain suction on all lower impressions, varying in degree from the maximum that may be dislodged only by repeated efforts to break the suction, to the most weakly retained which keep their place on the right when the mouth is opened as wide as the patient is able to open it. This suction persists just as long as the ridge does not absorb. It is most permanent where scientifically articulated and adjusted dentures are made from the impressions.

If the articulation of the dentures is neglected, or if the final adjustment of the articulated dentures to the mouth is imperfect, slight defects in articulation may prevent the exercise of habitual masticating movements with smoothness and precision, much as a slight hump on a filling will interfere with habitual masticating movements. In the case of the filling the trouble is all limited to the peridental membrane of the teeth affected, and may be quite easily remedied by grinding. In the case of artificial dentures, imperfect contacts result in movement of the denture which causes obscure soreness, difficult to locate, with accelerated absorption, till all adaptation of the denture to the ridge is lost. Even where articulation is most neglected, or where rapid alveolar absorption follows extraction of pyorrhea affected teeth, suction persists for weeks. In normal mouths it lasts indefinitely, sometimes becoming slightly less strong and in many instances becoming stronger than originally.

Usually the suction will not be as marked in the finished denture as it was in the impression even though the most careful technic is followed in making casts and in vulcanizing. Where maximum results are desired it is well to know that the technic of perfecting the fit of the lower denture given in Professional Denture Service will result in an improved adaptation and even stronger adherence of the denture to the ridge than the first impression exhibited.

OUR WAR GARDEN

By David L. Floore, Columbus, Wisconsin

FIRST PRIZE, WAR GARDEN CONTEST—PHYSICAL AND SENTIMENTAL RETURNS

"Say, Dad, can we have a war garden?" was the question thrown at me early last spring by my two boys, William and Joe, adventurous Boy Scouts twelve and fourteen years of age.

"Sure you can, fellows," was my glad reply. "You know the two vacant lots in the block adjoining ours; they have not been worked for twenty years; now you write to the man that owns them." A letter to him (he was in training at Camp Grant) brought the characteristic reply "*Go To It,*" and we at once became busy.

A garden 100 feet by 100 feet was decided on as a size that would keep our family of six in vegetables during the summer, some to pass around to friends and neighbors and a surplus to can and store in cellar for use through the winter, not forgetting that we have long winters in Wisconsin.

"Let's draw it out, Dad, like you do your flower borders," came the illuminating thought to one of the boys. So with paper, ruler, and pencil we began our garden.

We spent ten evenings on our plan, arranging and rearranging, deciding what vegetables to use and what varieties. A series of articles by Adolph Kruhm, published in *Garden Magazine,* on "Best varieties of vegetables for home gardens" were a great help to us in the selection of our seed, and while to me this was old reading I let the boys go through them and reap the benefit they could only receive through their own study.

We made a list for a series of planting, the earliest that could stand our cool climate, like peas, radishes, lettuce, spinach, onions, and beets; our second to follow would be potatoes, corn, and beans and later tomatoes, sweet potatoes, cabbage, celery, and celeriac from plants purchased as we did not grow our own.

We had our ground plowed deeply, and the old sod seemed just to be waiting for a War Garden, as the ground worked up beautifully, the correct word I assure you, if you are in the mood to appreciate it. And how we did work; using a tape line with our garden line, our rows were made regular and straight, and the result was a garden good to look at and easy to cultivate.

For cultivation our chief dependence was placed in the hoe, but we

also used a Barker weeder and cultivater to good advantage all through the season, running it over the ground like a lawn mower, cutting and pulverizing the surface, making an ideal dust mulch; while for deeper cultivation we would turn it over and use the teeth that are on top.

And now for our crop. Radishes so tender, crisp, and mildly flavored that peeling was unnecessary. Great bunches of leaf lettuce followed by wondrous heads that made spring tonics undesirable.

Shall I try to describe for you the tantalizing flavor of young green onions, served Saturday evening after a week's self-denial of them? You know, therefore, it is wasting time to do so.

Again, have you ever enjoyed the newer varieties of garden peas, such as Thos. Laxton, Sutton's Excelsior, Telephone, and Alderman? If not, try them next year and get acquainted with a bunch of thoroughbreds. Green peas and new potatoes make a fine combination for the table.

Do you know beans that are absolutely stringless, as tender and brittle as the modern hybridizer would have them? If not, try Bountiful Stringless Green Pod, or Burpee's New Kidney Wax.

And now, old dear, for a dish I have been saving for your dinner on a day when things "don't stay put"—Golden Bantam sweet corn, pulled from the stalk not over thirty minutes before serving; put into the pot to boil and brought on table piping hot, and if you can't rave over this yourself you have a hopeless case of chronic indigestion, or a set of teeth "Guaranteed for twenty years." Golden Bantam has many imitators, but no superiors; it is the "one best bet" in sweet corn.

Did you ever have the honor of bringing up town, in a small burg, the first ripe tomatoes, and exhibiting them to a score of Garden Cranks? The glory can be yours if you hustle. You can have Sparks' Earliana tomato 100 days from sowing the seed, and Chalks' Early Jewel in 110 days, a better early tomato and a more prolific bearer. For your main crop use Stone or Livingston's Globe or Coreless. I have quit staking my tomatoes and instead run a horizontal support about two feet from the ground, two feet in width, and let the vines run over this trimming to three runners, and removing all extra runners or suckers.

We practised intensive gardening to a great extent. We had four crops of beans, spring and fall leaf and head lettuce, Icicle radishes throughout the season, and when our early potato vines were hilled we planted late cabbage and rutabagas between the rows and they matured nicely.

We expect to make Liberty Cabbage, or sauerkraut, that a "Leather Neck" that this garden has made of me, can eat and enjoy. A year ago I weighed 215 pounds, yesterday I balanced the beam at 188, a welcome

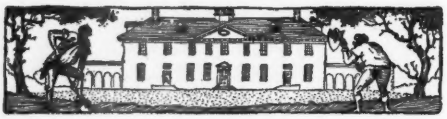
loss of 27 pounds, due no doubt to less sugar, no wheat bread, and last but not least Our War Garden.

It was a rule of Cyrus that every man in his army must perspire once each day. That was for health. The founder of the Persian Empire held the idea that an army is no stronger than its individuals. So he set about building men, and the chief rule in his programme was that each man must take enough exercise each day to arouse perspiration.

It is due the nation that its civilians be as strong and efficient as its soldiers. You owe it to yourself and the nation to be physically competent, because a sound body sustains a sound mind. If you are called, you will be prepared to meet the new life with zeal and enterprise.

Out of the office at five, home to old clothes and a hoe, we perspired enough this summer to make old Cyrus proud of us, and many a time a little curly haired darling would call "Papa, supper has been waiting for you over an hour." Moving the clocks ahead was a godsend to amateur gardeners, so let's all work for it next year.

Financial returns? We sold nothing, gave away lots. We have canned corn, beans, peas, tomatoes, and beets in the cellar, enough to last through the winter; we have pickles and chow-chow to give zest to our appetites; we have potatoes, carrots, salsify, celeriac, rutabagas, and celery for cellar storage. And best of all we have a couple of boys that we are very very proud of. Dollars and Cents? The extra service we render nowadays can not be figured in money, nor can the benefit to the individual be weighed with gold.



RETRAINING THE DISABLED MAN AS AN ECONOMIC SAVING

By Douglas C. McMurtrie, New York City

DIRECTOR RED CROSS INSTITUTE FOR CRIPPLED AND DISABLED MEN

In the past, our method of dealing with men permanently disabled in the course of employment has been to pay the worker a pension in the form of compensation, and forget him and his injury. But the cost of disability to the Dental Industry has not been alone in the premiums paid for casualty insurance. There has been the cost involved in the training experience, and adaptation of a skilled worker who does not return to his job, and the fitting of a newcomer to take his place.

There are three means of reducing and approaching the complete elimination of the cost of disability: first, accident prevention; second, thorough medical attention to minimize the disability resulting from the injury, and third, salvage of the remaining abilities of the worker through rehabilitation for self-support. The first of these has already received wide attention from employers and has wisely been encouraged in a financial way by casualty insurance companies and state funds. The values of the two latter have, however, not as yet been appreciated. Their energetic application would effect a tremendous saving to industry.

Many injuries from which men would completely recover in a short time under adequate and high-grade medical attention are treated for an insufficient time, or by incompetent physicians and, instead of a prompt return to work, the case at best drags along over an extended period and at worst becomes chronic or develops into permanent disability. Some states require the insurance carrier to provide but two weeks of compulsory free medical attention to the injured man. For the insurance company to take advantage of this limitation is the most short sighted policy possible, because for every dollar saved in physicians' or hospital fees, the insurance carrier pays out later ten dollars in compensation. And what the insurance company pays is actually paid by the insuring employers in their regular premiums.

Unlimited medical attention of the highest grade should be an axiom of casualty practice. It should be insisted upon by employer and workman alike. The best outcome of any injury is to have the employee return to his job as a well man in the shortest possible time. It is well to develop a science of dealing with cripples, but the ideal is to have fewer and fewer cripples with which to deal.

The third method of attack on the cost of disability is rehabilitation for self-support—the reëducation of an injured man for an occupation which he can follow, or a process which he can perform, in spite of his handicap. The science of rehabilitation is new, and the experience in it has practically all been gained in the effort to make sound and just provision for the disabled soldier or sailor. Every country among the recent belligerents is to-day operating a comprehensive system of reëducation for disabled soldiers, and is placing upon that system more dependence than upon the pension system.

Paying a man a small monthly or weekly stipend on which he is expected to live in idleness is not a very constructive method. With the breakdown of confidence in the pension system, it was realized that the only real compensation for disablement was restoration of capacity for self-support. It was further realized that very few jobs require all the physical faculties and that in the present-day variety of industrial processes, it is possible to find a job in which a man with a given type of disability can function 100 per cent. efficient. Some jobs are standing, some seated, others require walking about, some jobs at a bench working on small articles require but little strength, others involve great physical exertion. Still others do not require the sense of hearing, in others the sense of sight is not essential. Finding the future work of the disabled man, therefore, requires expert and painstaking choice, but a successful selection is possible even for the seriously handicapped. The first aim is to place the man back in a different job in his own trade or in a trade closely related. In such a job his past experience will stand him in good stead. Failing this, he can be retrained for a different line.

The process of retraining the disabled is known as reëducation, and can best be provided in a special school for crippled men. The first school of this kind in the United States is the Red Cross Institute for Crippled and Disabled Men, established in New York City through the generosity of Jeremiah Milbank. At this school, open to disabled civilians and soldiers alike, six trades are already being taught: artificial limb making, motion picture operating, oxy-acetylene welding, printing, jewelry work, and mechanical drafting. More will be added as the demand develops. Graduates are already giving satisfaction in the jobs to which they have been graduated, so the enterprise has passed the experimental stage. And in the results attained with disabled soldiers abroad there is overwhelming evidence of the logic and practicality of rehabilitation.

The cost of soldier rehabilitation is being met by the United States government and by the governments of some of our allies. It will be admitted without argument as desirable that the advantages of reëducation be made available to disabled civilians as well, but will not the cost

be prohibitive? The fact is that rehabilitation effects a reduction rather than an increase in the cost of disability to industry or to the community as a whole.

A typical case will illustrate how the saving is effected. A worker in Massachusetts was injured by a fall while working inside a submarine and his hand became permanently crippled. In due course his compensation rate was determined and he was referred to the insurance carrier to be paid ten dollars a week for a long period, with a maximum total payment of four thousand dollars. Since the disability was manifestly permanent the insurance company wrote the case off their books as a four thousand dollar loss and transferred that amount to reserve to cover the weekly payments. After the compensation had been paid for nearly a year, a new official of the insurance company began looking over the list of men to whom the company was paying compensation. His attention was directed to the man in question and the latter was requested to call at the office of the company. The case was like many thousands of others susceptible of rehabilitation for self-support, so the insurance company official put a proposition to the man in very frank terms. "I believe that you can be trained to earn a good living. I want you to understand very clearly, however, that this proposal is to the financial advantage of the company, but I also believe it is to your advantage as well. A total income of ten dollars a week is not very attractive to you and you would probably rather return to work at a good wage than remain idle. If you will consent, the company will send you to a school of reëducation and see if we cannot get you back on your feet in good shape."

The injured man consented to the proposal and the company sent him to the Red Cross Institute in New York. They began to pay him not ten dollars a week as required by law; but forty dollars a week, twenty to him in New York and twenty to his wife at home. The company also paid liberally his traveling expenses in both directions. In the period of eight weeks he was reëducated in oxy-acetylene cutting and welding and returned home. He is now making not only a satisfactory wage but twice as much as he had ever earned before the accident took place.

In the whole transaction every party at interest was benefited. The man was advantaged in that his general living standard was distinctly raised, and the necessity of working for his living could not be considered as a hardship. The company paid less than five hundred dollars for his rehabilitation and this expense in conjunction with the five hundred dollars already paid in weekly compensation during the first year of idleness made a total for the case of one thousand dollars. They were thus enabled to charge three thousand dollars of profit to the account of profit and loss. The community was infinitely the gainer in that the man,

formerly an unproductive consumer, became a useful producer instead. The community further gained in the elimination of the disabled man from the category of a prospective dependent, because while compensation might have taken care of him in a very insufficient way during the period of idleness, there would have come a time when compensation ceased and then he would have been in a desperate economic status indeed—confirmed in habits of idleness, untrained for skilled work, and without any source of support.

A more intelligent handling of disability by insurance carriers will, therefore, reduce their expense, and will thus cut the cost of casualty protection to the employer. There is needed also, however, some revision of compensation laws so that there may be definite encouragement to insurance carriers to offer opportunity of rehabilitation and definite encouragement to the disabled men to take advantage of it. Practically every compensation case that has ever come to the Red Cross Institute has come on the day his compensation expired. For one year, for two years, or for four years the man has existed in idleness, drawing compensation, and cultivating habits of indolence. When his support was cut off, he then became interested in rehabilitation. Present compensation legislation tends to encourage the man to remain idle because his payments are reduced by any improvement in earning capacity. A revision of this practice will make for more constructive provision.

In short, the first effort should be to prevent injury, the second to minimize its permanent effects, the third—when disability has ensued—to offset its economic consequences. The execution of this complete program is not only sound humanitarian practice—it is good business as well.

23RD STREET AND FOURTH AVE., N. Y.

DENTAL LAWS

DENTAL LICENSE REQUIREMENTS

By Alphonso Irwin, D.D.S., Camden, N. J.

ARGENTINA, SOUTH AMERICA

1. All applicants for a dental license in Argentina must undergo an examination.

2. All examinations and writing must be in the Spanish language. No interpreter is allowed.

3. The applicant must have reached the age of twenty-one years or over, and possess a good moral character.

4. He must possess a diploma from a "recognized" dental college, signed properly by the Faculty-Secretary, Registrar, Provost Dean, or Rector.

5. His diploma must be "validated" by a license from the Board of Dental Examiners of the state or country in which the college is located.

6. The diploma (and license) must be "authenticated" by the Secretary of State at Washington, D. C. ("As a matter of convenience, the endorsement of the Governor or State Secretary of the country, province or state wherein the college is located, is accepted.")

7. The diploma (State license and all credentials) must be "certified" to by the Argentina Ambassador in Washington, D. C., or be "vised" by the Argentine Consul General located in New York City, N. Y., or by both.

8. The diploma (State license and credentials) must be vised by the American Consul resident in the country, state, province, territory or district wherein the application for a license is made; and the Consul's certificates, in turn "certified" by the Minister of Foreign Affairs; and the diploma must also be "legalized" by the Argentina Minister of Public Instruction.

9. Translations of the diploma (State License and all credentials) must be made into the Spanish language, upon stamped paper, by a Public Translator, who shall sign same, and appear before the Secretary of the Faculty of Medicine in the college located in the state, province, territory or district where the applicant desires to procure a license to practise dentistry.

10. If his credentials are accepted, the applicant must present himself upon a date appointed by the Secretary, at his office.

11. The candidate must bring with him his "translated," "legalized," "certified," "vised," "validated" diploma (and other credentials), and two witnesses, "who are not minors or relatives, who shall declare in writing the candidate is the lawful owner of the diploma," and other credentials.

12. The candidate must present a petition, written upon stamped paper to the value of $1.00, asking to be "inscribed" in the Faculty and to be allowed to take the examinations necessary for the "re-validation" of his diploma.

13. The candidate must take at least one year, the last year in the National Dental College, or the course in dentistry of the "local" (State), Medical College or, better still, take the two years' course. One official advises taking a three years' course on account of the difficulty of the language.

14. At the end of the last collegiate year, the candidate must take the examinations. The examinations embrace the same group of subjects and are conducted in the same order as "prescribed for alumni of the local dental school." They are stated in general terms as including Anatomy, Physiology, Histology, Dental Prosthesis, Dental Clinics and Surgery.

15. The fee charged for the "revalidation" of a dental diploma is $424.60. Candidates must pay 125 pesos, $53.00, every time they go up for examination, whether they succeed in passing or not.

16. The address of the Secretary, to whom all correspondence should be sent, is Señor Secretario de la Escuela de Medicina, Buenos Aires. Inasmuch as the Secretary changes, it is not advisable to give his name here. Do not fail to address all your communications in the Spanish language.

I. REMARKS

Fees: Prospective candidates for a license to practise dentistry in a foreign country are reminded that fees are not immutable. They are subject to changes. While they do not fluctuate with the market prices,—they vary. For instance, they vary according to the year taken in a foreign dental college course, the number of years such a course is pursued, the dental college selected wherein the examinations shall take place, and the country, state or province wherein the college is located. All of these, besides other factors must be taken into consideration in estimating the cost of securing a license to practise dentistry in a foreign land. The smallest fee ever named was $148.61, which since has been displaced by $424.60 United States currency, while fees in South America range upward to $493.33 for the Lima Dental School examinations in Peru. During the reconstruction period following the war it is likely

these fees will become higher. Meanwhile such as are given afford a clue to the expenses likely to be incurred.

The Latin Republics: If we substitute the name of the college, the Señor Secretario de la Escuela de Medicina, as well as the fees corresponding to the year taken in college of the dental school situated in the capital city nearest where the dentist desires to locate; including also the officials representing such nation and the United States officials resident therein, the alien dentist will find that these requirements with few other alterations will apply to the Latin Republics of South America. In the United States of Brazil, however, the Portuguese is the official language, no other is used, and no interpreter is allowed. Other points of differentiation will have to be taken up in future articles by considering each country separately.

Language: The language is the most formidable obstacle to the alien dentist. Unless he understands the Spanish language thoroughly and speaks it fluently he is heavily handicapped at the outset. Unless he acquires this language before landing in Argentina he will lose much valuable time and incur additional expenses. Our advice therefore is: Master the Spanish language before you start.

Medical Supervision: It should be noticed that they do not have Boards of Dental Examiners in the different countries in South America, similar to those bodies provided for in the dental laws of the United States of North America, but the examinations are conducted by the dental faculties of the medical colleges and are evidently under medical supervision and control.

Time: The time of dental examinations is usually during the months of March, July, and December each year.

Prohibitions: In making your calculations for the future it should be noted that "Dentists are prohibited from performing operations which are not connected with their profession, may not administer internal remedies or anaesthetics." This restriction applies specifically to Brazil, but is in force elsewhere.

Registration: The successful candidate for a license must present his or her diploma (and License) to the Department of Health, and be registered.

Attention is called to the representations that dental examinations are *universal, uniform,* and *rigid* in the Latin Republics.

Educational: Certain facts in regard to education will prove helpful to the foreign dentist. Primary instruction is compulsory for all children from six to fourteen years, of *any nationality* whatever. Besides the public schools there are many private institutions under the inspection of the National Educational Board. Instruction at the public schools is free. Notice that the Secondary Instruction consists of Spanish grammar and literature, philosophy, mathematics, physics, chemistry, with other natural sciences, general history and modern languages, the teaching of which is *highly developed* in Argentina. Of these so-called Secondary colleges there are six in Buenos Aires, and one or more in each of the provinces, according to the needs. The higher education or "Superior" instruction is given in the faculties of the five universities of the Republic; Cordoba the most ancient; La Plata, Santa Fe, and Tacuman, and Buenos Aires the largest of them all. In one or more of these faculties are taught medicine (which *may* include a dental course), law, engineering, sciences, philosophy, and the letters. The medical course lasts *seven years*. Besides the regular degrees, diplomas are given by the government for chemists, midwives, surveyors, and technical occupations.

We would concentrate the pith of this paragraph in the concluding sentence: If the dentist is not well versed in the collateral educational topics mentioned, and his preliminaries have been neglected, he *might learn much* by applying for a license to practise dentistry in Argentina; but he will *save himself* a heap of *trouble* by *not doing so.*

Publications: We would suggest that the prospective candidate for a dental license in Argentina subscribe for one or more of the following dental journals, which are printed in the Spanish language. In this way he can obtain the most comprehensive and intelligent idea of the practise of dentistry in that Republic, as well as some insight into the license regulations.

La Odontologia Argentina, A. C. Mayer, Publisher, Av. de Mayo 1245.

Revisto del Centro Estudiantes de Odontologia, Montevideo 954.

Revista Dental, Publisher, Diego Gibson, Defensa 168. (Gratis.) Address communications to the above in Buenos Aires, Argentine Republic.

The following journals are printed in the United States:

Revista Dental Internacional, Pan American Publishing Co., Keenan Bldg., Pittsburgh, Pa., U. S. A. (Gratis.)

Revista Dental Triniestral, L. D. Caulk Co., Milford, Del., U. S. A. (Gratis.)

II. ESSENTIAL INFORMATION

Civics: Argentina is a republic composed of 14 provinces, 10 territories, and the Federal District of Buenos Aires. The Federal government consists of a President, Vice-President, a Cabinet, and a National Congress. The Branches of the government include the Legislative, the Executive and the Judicial functions. The President is elected by Electoral vote for a term of six years, and is not eligible to succeed himself.

Hipolito Irigoyen is President. He appoints a Cabinet of eight Ministers to assist him.

The National Congress is composed of a Senate and a Chamber of Deputies. The Senators are elected by the legislatures of the various Provinces and the Federal District and the Deputies are elected by direct popular vote.

Sr. Honorio Puerredon is Minister of Foreign Relations and Sr. Jose S. Salinas is Minister of Public Instruction.

You are required to have your diploma "legalized" by these dignitaries.

The Argentine Consul-General located in New York City is Ernesto C. Perez; while the Ambassador in Washington is Mr. Romulo S. Naon.

Buenos Aires, the Capital, is the largest city and the second largest Latin city in the world. It is also one of the most beautiful cities in the world, containing many of the most magnificent streets, parks, and buildings ever erected by master builders. At night these are brilliantly illuminated by electric lights, for electricity is being highly developed in Argentina. The most destinguished, enlightened and progressive officials administer the affairs of the city. The wise dentist will learn all he can about the civics of Argentina. The schools are supported by government or national funds. The granting of licenses is controlled by the government.

Caution: We caution all foreign-born applicants for a license to practise dentistry in any South American country that they must scrupulously observe methods of official procedure and respect for rank, polite ceremonials and racial characteristics. The alien dentist needs to exercise diligence, tact, patience, skill, forbearance and a manly spirit in all his intercourse with both officials and citizens.

The natives of these countries are exceedingly punctilious, jealous of their honor, and quick to resent any seeming slight. There is no surer way to forfeit their good-will than to forget these methods of their nation or disregard their rights, manners, customs or rites. Slackness in observing the Latin keenness for the "niceties" of polite society or the deference due cultivated or cultured people, and the respect bestowed upon

elders or "superiors" among "well-bred" people, is unpardonable, by aliens, who are so apt to be thoughtless, heedless, forgetful, or *so thoroughly saturated* with their own ideas that they do not think anybody else can have ideas worth noticing. We have met such candidates who were supposed to be educated.

While some of these hints may seem elementary, old-fashioned, or even undemocratic, we warn you that you will hopelessly prejudice your prospects in a foreign land, if you *fail* to *heed* them. In your native land, by disregarding some of these things, you may be able by your superior attainments to convince your own countrymen of your fitness to practise dentistry, but over there, 4,000 miles away, they will take you for what you *appear* to be, and they will make quick work of this *estimate*. It therefore behooves you by both your manners and breeding, as well as appearance, to prove that you are a gentleman, for no man is fit to practise any profession who is not at least a gentleman! There is also a *deeper significance* to this *admonition* as well as *subtle reasons* for anticipating that the most stringent regulations will be applied to the alien professional when he seeks for a license to practise in any country, other than his own, and these reasons are of universal application. They are, however, of such a nature and length that they would require a special article for their clear elucidation. But there are advantageous prospects opening up in South America to the foreign-born dentist who is sufficiently interested and *educated*, trained and ambitious, versatile and keen to counterbalance all difficulties in the way.

In response to numerous queries, verbal and written, we are constrained to offer other essential information in the hope that it will prove helpful. We are obliged to introduce this information by the statement that the present conditions in South America are somewhat demoralized, owing to the results of the world-war. Developments in that section recently divulged to the public, reveal that transportation, importation, trade, finances and business of all kinds have been interrupted and impaired. This condition applies particularly to Argentina and Brazil. The flurry may be soon over, or it may be prolonged indefinitely, pending the arrangement of the terms for the establishment of a permanent peace. Meanwhile we will state conditions prevailing in normal times.

As a basis for these remarks consider that the area of the Argentine Republic is 1,153,418 square miles, about one-third the area of the United States. The population is estimated at 9,000,000. The capital city is Buenos Aires, containing 1,700,000 inhabitants. It is nearly 4,000

miles distant from New York City. The schedule time by express steamer from New York to Buenos Aires is twenty-four days.

Climate: The climate is temperate with slight variations. The tip of the Republic of Argentina is within the tropics, and the southern extremity embraces the upper part of Patagonia, and is therefore relatively cold. The vast central plains have a climate about like that of the southwestern part of the United States. The choicest places of residence are Buenos Aires, Cordoba, La Plata, Tucuman, Mendoza, Bahia Blanca, Santa Fe, Salta, Parana, Mar del Plata, Tigre, and many towns of 5,000 population and over, too numerous to mention. The question of acclimation has already been referred to, and its importance to the dentist and the bearing upon his future chances of success cannot be overrated. The more intimately he becomes acquainted with this phase of the undertaking the more likely it will be for him to prosper. We have conversed with more American dentists who have been obliged to relinquish lucrative practices in South America on account of ill-health contracted there than for any other cause.

Accessibility: Buenos Aires is the principal seaport as well as the capital of Argentina. Vessels from all parts of the world go there. It is located on the Rio de la Plata, which is 28 miles wide there. Fine steamers from Europe and the United States make regular trips to Buenos Aires, and passenger service can be obtained weekly to and from the United States and probably every day (in normal times) to and from some port in Europe. The Lamport and Holt lines have a fleet of modern steamers in its Buenos Aires itinerary. Rosario, the second largest seaport, also has direct connection with foreign countries.

The railway lines of Argentina now connect Buenos Aires with Asuncion, the capital of Paraguay, and with Santiago the capital of Chili, and reach to the frontier of Bolivia. Almost all parts of the Republic are in touch with Buenos Aires. River steamers to Montevideo are very frequent, while river and coastwise service is maintained both north and south.

Immigration: The character of the clientele which the foreign born dentist must expect to attend to, is disclosed by the immigration returns. During the last fifty years there settled in Argentina over 2,000,000 Italians, about 1,150,000 Spaniards, over 200,000 French, about 50,000 English, 70,000 Austro-Hungarians, over 50,000 Germans, 30,000 Swiss, 21,000 Belgians, and other nationalities, making a total of almost 4,000,000 immigrants. Immigration is now estimated at about 300,000 annually.

The dentist is requested to note particularly this mixture of races, which is further augmented by the Mestizos, descendants of Latins (chiefly Spaniards) by marriage with natives, who constitute a large and important part of the population. There are also a few Indians left.

Buenos Aires is noted for being one of the most cosmopolitan cities in the world, and the character of the immigration proves it.

The metric system of weights and measures is used, a fact which it will be necessary to observe in making out examination papers, bills, prescriptions and communications.

Money: When we divest the motives of a dentist for locating in a foreign land of all superfluities, and get down to a concrete fact, we will find that he goes for the money that is in it. Skilful services command high prices in Argentina, but all expenses are in proportion. Double the prices of the necessaries of life in the United States and you will approximate closely to the price of the same things in that country. Accurate knowledge of the monetary system and the faculty of rapid calculation need to be cultivated. The money of the Argentine Republic is "on the decimal basis, the unit of value being the *Peso*." Foreigners, however, must bear clearly in mind that there is "both a gold and a paper peso." The gold peso is the unit adopted for financial transactions and for government reports unless distinctly stated to the contrary, although it is not unusual to place the word oro after the sum designated or at the top of a column of figures. The gold peso has a fixed value of $0.965 (U. S. gold). The paper peso is the unit of value for commercial transactions, for use in ordinary bills, and hotel accounts, carriage hire, tickets and purchases in shops. It is designated as m/n (moneda nacional), or as papel (paper); it bears a legally fixed relation to the gold peso, so that a paper peso always equals 44 per cent. (that is 44 centavos) of a gold peso; or is worth for ready calculation about 43 cents of United States money. The license fees are payable in gold.

Transportation: The subject of transportation requires close scrutiny. The dentist has three routes open to him by which he may reach Argentina: the direct route from New York via Bahia, Rio de Janeiro, Santos, Montevideo and Buenos Aires; the Panama route by which he can go in summer time down the west coast of South America by express steamer to Valparaiso, and by railway over the Andes to Buenos Aires, in approximately the same time (twenty-four days), by making close connections. Third: the European route, via steamer at Southampton (Cherbourg), or at the principal ports of France, Germany (?), Holland, Spain, and Italy for rapid passage across the Atlantic to Buenos Aires. Steam-

ers of all these lines are first class, and many of them are as luxurious as those plying between New York and Europe. Steamers leave every two weeks from New York City for Buenos Aires, while a passage can be obtained at almost any time from Europe. Passing through the custom house gives but slight delay, as the examination is conducted with courtesy and the examiners allow a great liberality to travelers. The questions of importations of *dental* equipments and supplies require a separate article.

Austrian, Belgian, Brazilian, British, Danish, Dutch, French, German, Italian, Spanish and Swedish steamers arrive and depart regularly from the Ports of Argentina to all parts of the world. There are fifty lines with agencies in Buenos Aires.

Different parts of Argentina may be reached over 22,000 miles of railways; also by river steamers, automobiles or carriages and trolleys or electric roads.

THE VIRGIN ISLANDS

FORMERLY THE DANISH WEST INDIES.

1. "No law has as yet been enacted covering the licensing of Dentists and the former Danish requirements are for the present in force.

These requirements are as follows:

A. The candidate must be a graduate of a reputable dental College and must pass an examination before a Board appointed by the Governor.

B. The dentist is not entitled to practise other surgical or medical procedures than those having to do with the teeth.

C. He is not entitled to prescribe medicaments for internal use.

D. If chloroform or other narcotics are used to produce general anesthesia, a physician shall always be present.

E. The candidate must agree to give free consultation to poor people at least one hour a day at a fixed time, and to insert a notification in a newspaper to that effect.

F. The license is subject to withdrawal at the Governor's discretion.

G. No fee is to be paid for the license.

2. There are at present three dentists practising in the Virgin Islands, the total population of which is 26,051.

3. Arrangements for the examination of applicants to practise dentistry should be made by letter to the Governor."

AMERICAN DENTISTRY IN THE VOSGES MOUNTAINS

By Alfred G. Hill, Topeka Daily Capital, Topeka, Kansas

Governor Henry J. Allen, new executive of Kansas, devoted a portion of his talk to the Kansas Editorial Association in Topeka, January 24th, to a story of how the American army introduced modern dentistry in the Vosges mountain region of France.

Governor Allen spent eighteen months prior to his election in France as a Red Cross and Y. M. C. A. worker. He was with the 35th Division composed of Kansas and Missouri National Guard troops.

"It was no uncommon sight to see American soldiers with obliging natures, stand on corners with their mouths opened so as to expose their teeth. Curious French audiences who had never seen perfect sets of teeth before, seemed never to tire of the spectacle.

"One day when I was riding in a side car, my driver pointed to a girl approaching. 'Watch her show her teeth,' said the driver. 'I know her and she is plagued because she has two teeth out in front.' The girl smiled all right but in a funny manner with her lips held over her teeth. She envied the Americans.

"I know one dentist who devoted three hours each afternoon to free work for the civilian population—mostly women. There always was a crowd waiting about his tent during this time. The women were willing to wait hours in order to gain teeth like the Americans who have enjoyed the advantages of good dentistry.

"The native population soon emulated the soldiers in the use of tooth powder and tooth paste. They had never known of the advantages of care of the teeth before.

"It was startling, the percentage of the population with imperfect teeth due to this neglect."

The Sunflower state editors who heard Governor Allen's address, which dwelt on different events of his stay in France, were much impressed by his practical tribute to the efficiency of modern dentistry.

"That's a case where a trip to France was necessary to bring home the fact that American dentistry which can make the average soldier's teeth an object of wonder to French natives, is really of untold value to the nation," remarked one of the newspaper men following Governor Allen's address.

DR. JOHN A. WATLING

If one could lay out in advance the plan for his own life, he probably could ask nothing more than that his working period should be filled with agreeable work, beneficial to others and to himself, that his later years should be leisurely, and that they should witness manifestations of friendship and appreciation by those with whom he has been brought into contact.

A life so ordered closed January 17, 1919, when Dr. John A. Watling died of pneumonia at the age of practically eighty years.

In the lives of some thousands of dentists, particularly those who were graduated from the Dental College of the University of Michigan, Dr. Watling occupied the place of teacher, helper and friend. Their feelings for him were a mixture of respect for his professional ability and zeal, and a personal liking for his lovable human qualities. This feeling led his former students in Europe and America to welcome him to their communities and homes during the travels of his later life.

Dr. Watling was born in Illinois June 26, 1839. His parents moved to Ypsilanti, Michigan, when he was 12 years old. He early became interested in dentistry, and at the age of 17 or 18 years attended dental college at Cincinnati, Ohio, from which he was graduated with honors. He returned to Ypsilanti, entered practice and continued in it until 1903.

Perhaps Dr. Watling's greatest influence was exerted through his professorship in the Dental College of the University of Michigan. The idea of this college seems to have originated, about 1865, in a group of dentists which included Dr. Watling. No practical progress was made until 1875, when the Michigan Legislature was persuaded to appropriate $6,000 for a dental college. In this year Dr. Watling, after much hesitation, and at the request of many of those interested, accepted a professorship in the college which he filled with great satisfaction to all concerned, until he resigned in 1903. At this time he removed to Washington, D. C., and accepted a professorship in dental metallurgy in Georgetown University. He occupied this professorship for four years, and resigned to spend the rest of his life in leisure and travel. Accompanied by Mrs. Watling he traveled much in Europe and America, many of his journeys being like a continual reception by professional friends and former pupils.

So ends a happy and useful life. He left the world better than he found it, and exerted an uplifting and constructive influence in many lives. He lived out his allotted span of years. He saw his professional achievements and personal qualities extensively recognized. He has left in many minds pleasant memories of a capable, lovable man and friend.

DEATH OF EDWARD ROWAN

Edward Rowan, Founder and President of Edward Rowan, Incorporated, died on January 19th, 1919, at his home, 629 East 163rd Street, New York City, after a short illness.

Mr. Rowan was well known throughout the dental world, and was a foremost manufacturer of dental filling golds. In 1878, he commenced business on his own account, to manufacture goods of his own design. He was the originator of Decimal Gold Foils, which are known throughout the world.

Edward Rowan was a man of sterling character and strong convictions, and was held in high esteem by his friends and acquaintances. He was unselfish, quiet in his manner, sincere in his friendship, with a nobleness of character what won for him the love and respect of all who knew him.

He was a member of the American Dental Trade Association; Dental Manufacturers' Club; Dental Gold Manufacturers' Association of America; Bronx Chamber of Commerce, and several Fraternal and Charitable Organizations.

Edward Rowan was married to Miss Margaret J. Johnson in 1878, who with two sons and two daughters, survive him. Funeral services were held at St. Augustine's Church, Bronx. Interment was in Woodlawn Cemetery, New York City, on January 22nd, 1919.

DELUSIVE CURES

No disease demands keener individualization or more unremitting care on the part of the physician than tuberculosis, writes Dr. Howard Crutchen in the *Medical Record*. Meat, eggs and milk cannot invariably be depended upon by any means. Some patients thrive surprisingly well on a dietary largely vegetarian in character. A few well-selected medicines are of the highest value at times.

The physician must exercise discretion based upon individual experience, one sufferer improving upon cold, dry air, whereas another will do better in a region of more heat and moisture.

For a person in settled business in the East to break up all ties and fly to some desolate, ill-kept boarding house located in some far away desert, under the pathetic illusion that isolation is a panacea for disease, is such pitiable nonsense that the wonder is that any rational being should be guilty of it.

Many things pleasing to the eye and profitable to the mind bear no relation whatever to the cure of disease. A charming landscape is no substitute for wholesome food, comfortable surroundings and skilled medical supervision. There is no more a specific for tuberculosis than there is for poverty and old age; and so far as climate alone is concerned it has no more curative effect in this condition than it has in gallstones or cancer.

TO THE WOMAN WHO UNDERSTANDS

Dr. Frank Crane, the celebrated writer and philosopher, says: "A woman's specialty is understanding. That is, understanding men. A woman gets to know you, by and by, better than you know yourself. Back of every man there stands, somewhere, the woman who understands." The following lines, by two different writers, express the same idea in very pleasing form:

AN APPRECIATION

She makes no plans for you to fulfill,
  The woman who understands;
She sends no unwished grist to your mill,
  The woman who understands,
'Tis the thought she brings
That sings and sings
  Into the heart of you,
Till it flows and glows
And finally grows
  Into visions of dreams come true.

She sits and smiles from her easy chair,
  The woman who understands,
And as she listens your plans grow clear,
  The woman who understands.
She lays no claim
For heart or brain
  To what she is giving you,
'Tis her soul's fine grace
Gives you strength for the race,
  The race that makes dreams come true.

A TOAST

Come, fill up your glasses, my comrades,
And have just another with me,
We've toasted the wives of our bosoms
And sweethearts across the sea.
We've toasted all manner of women
At home and in distant lands,
Now let me be host—
And give you this toast
The woman who understands.

The woman you don't need to lie to,
The one who always plays fair,
The woman who knows more about you
Than God does, and still can care.
The woman who if you run crooked,
Pulls you up with firm, cool hands
Who chooses a mate
And runs with him straight—
Here's to the woman who understands.

The way to wealth is as short as the way to market.—Buy War Savings Stamps.

"In Flanders' Fields"

An Answer

And in our hearts eternal love shall glow
For all those crosses, row on row,
That mark your place; and in the sky
The Dove of Peace shall ever fly—
Silenced now the guns below.
Dear noble dead, you sleep to-day
Where poppies grow, and though generations go
Your deeds live on.
For your great sacrifice we've wept,
Yet in our grief 'tis grand to know we've kept
The faith with those who slept
In Flanders' Fields.

We came to aid you 'gainst the foe,
America with hearts aglow
And outstretched hands to grasp the torch you'd throw
And thrust it high.
Ever shall we hold it there, and woe to those who ever dare
To cast it low.
Rest then in peace, the task we'll do
For Liberty, for Us, for You,
In Flanders' Fields.

Written by
James M. Porter, D. D. S.
Frostburg, Maryland

PREPAREDNESS LEAGUE NOTES AND NEWS

COMMUNICATION FROM THE PRESIDENT

Every day it is becoming more apparent that many of our profession who left well-established and hard-won practices are returning to find nearly everything swept away down to the lowest rung of the ladder which, through honest toil and travail, had long been passed in the upward climb.

An urgent call for help goes out from the President to every member of the League to give our brothers the fullest measure of coöperation right away. *To-morrow* will not do. *It must be done to-day.*

Go to each returned dental corps officer in your neighborhood and ascertain his circumstances. Call all dentists together surrounding his location and get them to send patients to him whenever possible. You can well afford to make this sacrifice. Make it a point, also, to acquaint the public of his return to practice and of his need of support. You will be surprised at the assistance you can render in thus discharging a positive obligation.

It is distressing to report that undue advantage is being taken of our boys in this way and we sincerely trust our members will do all they can to reëstablish them in that which justly belongs to them. He who takes undue advantage of these conditions does not merit professional relationship with his confrères.

You will learn in due time that these men have sacrificed more than we at home were aware of and we would emphasize the truth that he who attempts to gain through their misfortunes must suffer eventual defeat.

The President earnestly requests all returning dental corps officers to communicate with him that such assistance as is possible may be rendered.

OUR FUTURE

The league is gradually becoming adjusted to the new conditions and its officers are planning to develop into a broad organization of interna-

tional character devoted to public service work and such activities as come within the rightful field of our energies.

POST-WAR COURSE OF THE LEAGUE

The second course given at New York from Feb. 3 to 8, inclusive, proved to be an intellectual feast of the rarest quality. It would be impossible to give an adequate idea of its value to those who were fortunate enough to enjoy it. It was an unqualified success!

The demand for a special course in Post-War Oral Surgery and Prosthesis is now established and the League will be glad to correspond with all who wish to take it, with a view of bringing it within reach. We hope to carry it to every large city in this country.

RED CROSS HOME SERVICE WORK

General coöperation of League officers and members is being experienced throughout the country by the Red Cross Home Service Section. This most worthy object of giving needy families of our soldiers dental treatment should be taken part in by every loyal dentist.

We would especially urge your care of the families of those who made the supreme sacrifice. We have a solemn duty to perform toward all such, especially those who are handicapped by lack of means and we must keep constantly in mind that our work is not yet done. Our slogan must be,

"Carry On."

J. W. BEACH, *President.*

A POST-MORTEM CONVICTION

I heard to-day of a curious incident in connection with the capture and execution of a certain German spy. He had been shot, and the usual formal post-mortem examination was held. This provided convincing proof of the spy's absolute guilt—if it were needed. The spy has a gold crown to one of his teeth, and this was found to be hollow and to contain a micro-photographic code message, which had to be photographed and enlarged before it could be decoded successfully.

A West End dentist informs me that it would be quite a simple operation to make a hollow crown capable of taking two or three square inches of fine paper such as would be used in a case like this.—*The Dental Surgeon.*

DENTAL ECONOMICS

PAYING TO PRACTICE

The average dentist has an investment of about $3,750 in special preparation for the practice of dentistry, most of which is useless for any other vocation. Unless he takes some method of getting this sum back by the time he is retired from practice by old age or death, he might be said to pay that amount for the privilege of practicing.

The recovery of that sum should be in addition to the receipt of sufficient remuneration to permit him to live and save something. He must recover something more than wages.

If A, fresh from high school, goes to work for B for the sum of $5 per week, and grows up in a mercantile or manufacturing business so that he receives $50 per week, he will have no investment in special education or equipment. His problem is to live and save from his salary. He can quit work at any time with only the loss of his future earnings.

If A, instead of going to work for B, goes to dental college, he will spend at least $2,500 in time and money, and when his office is fully equipped will have spent at least $1,250 more. This education and equipment are suitable only for the practice of dentistry. Unless he practices dentistry they are lost. When he ceases to practice they will be lost. The loss will occur whether they are worn out by lack of replacement or kept up to date and sold for a song.

If A wishes to stand square with the world at the end of his period of practice, he can do so only by having back in hand the sum he expended for special education and equipment, in addition to whatever savings he may have made from his earnings.

Perhaps the best way to accomplish this is for him to make an annual charge against the practice, as part of the overhead expense, of 5 per cent. of the amount of his expenditure for education and the office equipment expense. (The upkeep of the equipment is a part of the annual overhead expense.) This charge should be made before the amount of salary is figured out and should, if necessary, reduce the salary. This plan can be made effective only if the amount produced by the 5 per cent. assessment is withdrawn from the practice and deposited separately or invested.

Unless some such plan is followed the dentist "pays to practice."

CHANGING THE TERMS AFTER GOODS ARE BOUGHT

By Elton J. Buckley, Philadelphia, Pa.

[Readers of The Dental Digest are invited to submit questions of a legal nature to Elton J. Buckley, care of The Dental Digest. This service is free.—Editor.]

A question has been put to me that I do not remember having written on, at least not specifically on this phase of it. It is this:

When a man buys goods or has some kind of a business transaction with another, all the terms of which are agreed upon at the time the deal is made, can the seller afterward, by a notice in an invoice, or on a bill head, or in a letter, make some new rule about it which will affect the other party?

The illustration which is used in submitting the question to me will make the application of the rule clear. In this case a merchant bought some goods on certain well-understood terms. They were delivered and accepted and the invoice paid. Several weeks later, when the goods were gone over with the intent to put them on sale, it was discovered that they were defective. Claim was made, but the seller declined to recognize it, pointing to a clause *in the invoice* reading: "All claims must be made within ten days after receipt of goods." In the original order nothing had been said which would limit the making of claims in any way.

The question is, is that buyer done out of his right to claim for defects?

The answer is emphatically no. A seller cannot take a completed order or contract, and introduce into it, secretly in a way, an entirely new provision which affects the buyer's rights.

The above effort to do this is typical of schemes that sellers of merchandise and parties to contracts, are constantly endeavoring to put over and quite often they succeed because the other party doesn't know his rights. The general law on the subject I quote as follows:—

> Terms brought to the acceptee's notice after the agreement is complete will not affect the agreement. If a party, therefore, cannot be charged with notice of the conditions contained in a paper which he accepts as containing the actual offer at the very instant it is delivered to him, even actual notice afterward will have no effect. Upon receipt by a railroad of a parcel to be conveyed to its destination, the charges being paid or to be collected on delivery by the consignee, the contract is completed and the railroad's responsibility at

> once attaches, and it cannot be changed by the subsequent delivery to the customer of a bill of lading or other writing containing conditions limiting the railroad's liability, unless it appear that the intention of the parties was that the oral negotiations were simply preliminary to the formal contract which was to be contained in a bill of lading or other written instrument.

Note that the above lays down the rule that even if one party has notice of what the other is trying to do, viz.: introduce some new rule, he is not bound to notice it and is not bound by it. To apply this, if in the above case, the buyer had seen the words "all claims must be made within ten days," etc., in the invoice, he would not have been obliged to pay any attention to them.

There was one case in which a silk jobber delivered to a buyer a lot of silk to be dyed. When it came back it was found to be badly and unskilfully done. The owner brought suit for damages. The defense was that when the silk was sent back to the owner, after being dyed, it was accompanied by a bill on which was printed: "All claims for damages or deficiency must be made within three days from date, otherwise not allowed." It was also claimed that the owner of the silk saw this on the bill and it was argued that by accepting the silk and the bill, he was bound by the notice. The court made short work of the defense. It held that there was nothing to it. This was the core of the decision:—

> Upon a bailment of goods for work and labor upon them, the contract between the parties arises immediately upon the delivery of the goods to the bailee. The contract is that the work shall be performed with reasonable skill and care and that the work being completed they shall be returned to the owner. The bailee cannot prescribe terms on which he will return them, and an agreement of bailee that he will make a claim for damages within certain times lacks a consideration, for bailee was bound to return them unconditionally.

In still another case a dry goods jobber sold through a traveling salesman a quantity of goods at certain prices and on certain terms contained on written memo signed by the salesman. The goods were shipped and with them an invoice printed thus: "All bills become due when parties suspend payment, assign or sell out. All goods dated ahead are merely consigned and subject to replevin until said dating has expired. Retention of the goods will be considered acceptance of all the terms herein."

The customer received and held the goods without objection, and prior to the expiration of the dating he assigned for the benefit of creditors.

When the jobber stepped in and tried to seize the goods on the ground that the provision on the invoice was part of the contract, the court held that the notice was not binding on the buyer, as the principal had no right to modify the terms of agreement made with the salesman. That agreement fixed the rights and liabilities of both parties and could not be changed by any notice one might give the other later.

Any buyer can legally stand on the terms of the order, and can successfully refuse to be bound by any restrictions sought to be introduced in the deal afterward.

COST OF LIVING

BUDGET ITEMS	% INCREASE JULY, 1914, TO NOVEMBER, 1918	% INCREASE JULY, 1914, TO JUNE, 1918	RELATIVE IMPORTANCE IN FAMILY BUDGET
Food . . .	83%	62%	43.1%
Rent . . .	20%	15%	17.7%
Clothing. . .	93%	77%	13.2%
Fuel and light .	55%	45%	5.6%
Sundries . .	55%	50%	20.4%
Average .	65.70%	50.55%	100%

In compiling this table studies were made of the budgets of 12,000 families of the wage-earning class. Of course, in certain sections of the country the advances due to local conditions vary more than the above broad averages. Allowing for these differences, however, it is safe to say that the average cost of living from the beginning of the war in Europe to last November had advanced between 65-70%. Since that time minor declines in certain items have taken place, but as nearly as can be judged this will not reduce the above figures more than 3 or 4%. Moreover, whatever decline in living costs is brought about must be more or less gradual. Organized labor is determined that such declines shall precede rather than follow any wage reductions. Clients, therefore, should be prepared for continued high labor costs, and also take into account probabilities of labor difficulties in making contracts for the coming months.—*Selected.*

DIETETICS AND HEALTH

HOW THE PRESIDENT KEEPS FIT

Every man may add to his health and efficiency by following the simple rules which the President of the United States observes in his daily life and work. Many successful men do so, no doubt, but most of us are inclined to drop into easy and formless ways.

Much of the credit for the daily programme of the President is due to Rear Admiral Grayson, his physician, who laid out the course for him originally and sees to it that he keeps it. Even though we cannot have a health pilot always at our elbows, habit becomes an able steersman.

The secret of accomplishing a great deal lies in doing the creative part of one's work when the bodily strength is at its highest point and the mind is fresh and keen. The President, therefore, is an early riser, so that he may take some vigorous exercise before his working hour begins. This varies according to the season of the year. If the weather is pleasant, the Chief Executive is out early for a brisk walk, and if he is kept indoors, sharp dumbbell exercise suffices. Even when the White House was afloat he took his constitutional on deck. His physician, who is called upon by the Paris journalists for all the details of the Presidential regimen, no doubt explained why Mr. Wilson liked to take an early walk about the grounds of the temporary White House in the French capital.

Once the mind and the body are ready for the work of the day, the head of this nation works with eagerness and zest. Whether he is composing State papers on his own typewriter or dictating to the stenographers, he is giving his best morning efforts to planning and to the consideration of broad general policies.

Many men who attend to a staggering load of letter writing in addition to their other work have certain hours of the day which they devote to that most difficult of tasks, keeping the desk clean. The accumulation of unfinished work, the forcing of routine matter into the precious hours which should be devoted to constructive effort, keep many men in a state of perpetual fussiness. The mental agility with which the President attends to his business and his serenity of manner are largely due to a well ordered plan.

There is an expression which Virgil puts into the mouth of the pious Æneas, "in the midst of great affairs be calm," which applies to a large extent to the methods of men who accomplish big things in this world. The unimportant details which cannot be relegated to others may often put the ablest mind in a flurry unless there is some way of quickly disposing of them.

The afternoon is the time for digging into facts and doing the tasks which must be done in the ordinary course.

Within the last two years the President, under the guidance of his Rear Admiral physician, has taken time to play. He goes to the theatre, interests himself in sports and in the lighter side of life, so that he may be more fit to face the serious problems which confront him. Always known for his well disciplined mind, and his ability to keep its various activities separated, Mr. Wilson has developed this gift more and more. That facility for doing one thing at a time, and of throwing work completely aside for recreation, has been much cultivated by our Chief Executive, even in times of great national stress.

Many men as they approach middle life are disposed to get into a rut just because they neglect the spirit of play. As long as a man has in him the boyhood outlook and can forget the anxieties of the day when he goes home to dinner, and after that find recreation at the playhouse or in his club or at a game of cards beneath the evening lamp with his children, he is in no danger of becoming a packhorse and a drudge. He will sleep better for this and in the morning be better prepared for the hard thinking and the quick action which is so necessary for success.

One cannot have a hair trigger mind, ready on the instant to evolve policies and make quick decisions, unless he takes the trouble to keep it up to its work by giving it a rest and keeping it well lubricated with the oil of wholesome amusement. It is not how much but how well one works.

It may require something of the Spartan nature for one who has gone beyond more than three score milestones to keep up such a programme, but because he does do it we find Mr. Wilson now devoting himself in the prime of intellectual vigor to great world problems. It is certainly well worth while to follow as a model the well ordered methods of work of a man who is able to accomplish so much and to impress his thoughts and his ideals upon millions of his fellows.—*N. Y. Evening Sun.*

BAD TEETH IN NEW ZEALAND

The President of the Dental Association (New Zealand) was the spokesman of a deputation which urged the Government to establish dental bursaries. He said that the examination of thousands of children showed the percentage of those suffering from dental caries to be 95. If cows were similarly affected they would not be tolerated for one month. Sir J. Allen, Acting Prime Minister, in a sympathetic reply, praised the dental service of the New Zealand Army.

REPAIRING HOLE IN A GOLD CROWN.—If in the finishing process a hole is made in a gold crown, paint the outside with a mixture of thin whiting, except round the hole. Plug the hole with gold foil, touch it with borax, and use a little gold solder inside the crown. Fuse with blowpipe and a good repair is the result.—*Oral Health.*

EXTRACTIONS

When some men think they are thinking they are only killing time.

The dead are never sick—therefore all diseases may be classed as afflictions of the liver.

You have probably observed that when some persons speak their minds they don't say much.

Love may be blind, but the girl's father and the dog seldom require the services of an oculist.

The man who thinks he knows it all usually marries a woman who can teach him a lot more.

A lot of women are going to regret prohibition, the way it will lead to their husbands staying around home.

A Mr. Cobb married a Miss Webb. He knew that they were meant to be joined as soon as he spied her.

"Why do you use the expression 'as pale as a doorknob'?"

"Doorknobs are so much in doors, you know!"

Lawyer—A divorce will cost you $200.

Woman—Heavens! If I had known they were so expensive I would never have married.

Some people are so cynical, don't you know! A person of this tribe seeing on the bill of fare "Oxtail Soup," said: "Well, that's going pretty far back for soup!"

Dentist, speaking to patient about to have a tooth extracted—"Have you heard the latest song hit?"

Patient—"No. What is the title of it?"

Dentist—"The Yanks Are Coming."

"Did anybody comment on the way you handled your new car?"

"One man did, but he didn't say much."

"What did he say?"

"All he said was $50 and costs."

"I'll learn ye tae tie the kettle tae the dog's tail!" Tommy's mother yelled in her wrath.

"It wisna' oor dog!" cried frightened Thomas.

"Naw, it wisna' oor dog," shrieked the enraged mother, "but it wis oor kettle!"

An editor received this letter from a fresh youth: "Kindly tell me why a girl always closes her eyes when a fellow kisses her."

To which the editor replied: "If you send me your photograph I may be able to tell you the reason."

"Want to buy a mule, Sam?"

"Wot ails the mule?"

"Nothing."

"Den wot am yo' sellin' him for?"

"Nothing."

"I'll take him."

Sandy Macpherson came home after many years, and met his old sweetheart. Honeyladen memories thrilled through the twilight and flushed their glowing cheeks.

"Ah, Mary," exclaimed Sandy, "ye're jist as beautiful as ye ever were, and I ha'e never forgotten ye, my bonnie lass."

"And ye, Sandy," she cried, while her blue eyes moistened, "are jist as big a leear as ever, an' I believe ye jist the same."

Shoeless, he climbed the stairs, opened the door of the room, entered, and closed it after him without being detected. Just as he was about to get into bed his wife, half-aroused from slumber, turned and sleepily said:

"Is that you, Fido?"

The husband, telling the rest of the story, said: "For once in my life I had real presence of mind. I licked her hand."

PRACTICAL HINTS

This department is in charge of Dr. V. C. Smedley, 604 California Bldg., Denver, Colo. To avoid unnecessary delay, Hints, Questions, and Answers should be sent direct to him.

ACCESS.—Get access to the canals of the tooth without spoiling the crown thereof for a good filling or inlay; above all, *get access* and don't waste hours of time and perhaps fail in the result by trying to look around or work around a corner of the tooth. The most important part about a pulpless tooth is to get at the canals so you can treat and fill them thoroughly.—*Dental Review.*

DEODORIZATION OF DENTURES.—After a vulcanite denture has been worn for a time, it will develop and impart to the breath a peculiar, offensive odor. This odor may be overcome without any injury to the denture on the oral tissues by keeping it overnight in water to which has been added some aromatic sulphurous (not sulphuric) acid. About 10 or 15 drops of the acid to a tumbler full of water will be found effective. In the morning the case should be washed with soap and water.—*Pacific Dental Gazette.*

STERILIZATION OF ALUMINUM TRAYS.—These trays cannot be sterilized in the usual sodium bicarbonate, or borax solutions, without injury or destruction. The solutions used must be of an acid reaction to prevent this harm and at the same time brighten the metal. The addition of vinegar or sulphurous acid to the water in which the trays are to be boiled, will prove to be very effective.—*Pacific Dental Gazette.*

Editor of Practical Hints:

Will you give me your method of treatment of the following conditions through columns of the DENTAL DIGEST?

In the first place I have always been under the impression that a tooth with a putrescent pulp may at any time get away from our control and be bound to go through the process of pain and swelling of tissues, in

spite of all we can do. Is this impression correct? At this stage, the stage of pain after tricresol and formalin have been sealed in, I pick out the stopping and leave the tooth open; if pain does not stop then, a fresh dressing of tricresol and formalin sealed in would do no good, would it? So I then just advise patients to apply a hot raisin to the gum to draw the abscess to a head, and tell them to take a little aspirin for the pain. Is there anything else I could do? Or, would you advise a little warm antiphlogistine applied to gum tissue, which I understand scatters instead of drawing like a warm raisin or fig. If a tooth like the above were extracted, pain would continue, and a secondary abscess be liable to form would it not? Or is this a remote possibility?

What is the prognosis of a tooth that has a fistulous abscess on it, say of a year or two years' standing, or longer? Can this tooth be restored to service without being a menace to health?

In treating old roots that are apparently putrescent and have had a history of swelling, often times part way in the root sensitive tissue will be touched; is this live pulp tissue or granular tissue grown in from the apex? What is the best way to remove this?

Now, if I am not trying your patience too much, I will appreciate your answers to these questions, and either in verification or correction of my methods will be much wiser.—R. H. KOEHLER.

ANSWER.—Your first statement is correct. I think though this seldom happens if you follow the rule of never attempting to enter a putrescent canal without first having sealed in an antiseptic at the orifice.

Your second question where pain persists after tricresol and formalin have been sealed in, think you should attempt to open the canal very thoroughly and if a discharge of pus is discovered another application of tricresol and formalin would be indicated, otherwise not. As I understand it, tricresol and formalin are indicated where pus is present and never otherwise.

If you have the canal thoroughly opened for vent or drainage, think the antiphlogistine would be preferable. If you feel, however, that you must draw it to a head use hot raisins, changed frequently. Many men in this instance anaesthetize and lance the gum and drive a sharp bur through the bony plate to apical region, thus establishing artificially a fistula, with infinitely less discomfort to the patient than as Nature does it in these cases. "Is there anything else you should do?" Yes, you should in every case, where at all possible, provide yourself with an X-Ray picture of a putrescent or abscessing tooth before attempting to treat it; and if the film shows extensive destruction apically, especially if accom-

panied by resorption of the root, leaving a roughened or thorny surface, extraction should be resorted to immediately.

You need not hesitate to extract any tooth in any state of putrescence or abscess for fear of after pain or secondary abscess; for if proper attention is paid to asepsis and the manner of injection (if you use infiltration, avoid driving the infection into deeper tissue by the pressure from the injection), the possibility of secondary abscess is so remote as to render it unworthy of consideration. If you had a suppurating thumb because of the irritation from a splinter, you would not hesitate to remove said splinter.

The fistulous abscess, if not accompanied by bone necrosis or marked and jagged resorption of the root, responds apparently the most satisfactorily to treatment of any of the forms of abscess, by flushing freely through the canal and out the fistula with water, or preferably normal salt solution. Follow this with a saturate solution of phenol, until the gum about the fistula is thoroughly whitened; neutralize this exteriorly with alcohol, dry canal and fill permanently. Usually fistula will close right up with apparently an entirely satisfactory result.

Your case of finding live tissue in the canals of old roots having had a history of swelling, I believe would hold only in multirooted teeth where one or more roots were putrescent to and through the apex with another canal still retaining some vitality. Or in a case of perforation you might apparently have live tissue part way down a putrescent canal. Place a diagnostic wire to point of sensitiveness and X-Ray. If you are sure of live pulp tissue within canal, nerve block, infiltrate, use analgesia or with a sharp, fine barbed broach dipped into a concentrated cocain solution, gently churn into the canal until you work your way to the end usually without much discomfort.

You of course are aware that at the present time it is an open question whether or not we are justified in attempting to save any dead teeth, and especially teeth that have shown any signs of active infection. Personally, I believe, at present, that we should attempt to save devitalized teeth that are of decided value to the masticating apparatus, and that are not too badly affected, in the mouths of patients whose general health is normal and whose family history of resistance to focal infection is normal. But in the cases of people very ill from any of the very many ailments that may be directly traceable to focal infection, I think it may often be our duty to extract all dead teeth.—V. C. S.

THE BEST OF CURRENT THOUGHT

[*The Dental Cosmos*, February, 1919]

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SCHOOL DENTISTRY: TO-DAY AND TO-MORROW

By Lieutenant Harold Smith

Att. R.A.M.C.; Dental Surgeon

[This article from *The British Journal of Dental Science*, sets forth the problem of the school dentist in England, and there are some points which are well worth consideration by American dentists, especially the reference to the work of the trained dental nurse and the narrowing effects of dental school work on the dentist. With school dentistry being adopted in many cities, it may prove interesting to know how American dentists will meet these problems.—Editor.]

School Dental Officers of to-day are the pioneers of the School Dental System of to-morrow. Until the system is definitely established there cannot help but be considerable deficiencies and inequalities in the methods and administration of the forerunning elements.

It is the obvious duty of the School Dentists' Society to discuss the problem in all its aspects so as to be in a position to delineate a suitable plan for the guidance of the builders of the new system.

In the first place there appears to be at the present time an absence of a definite policy with regard to methods of treatment, and of inducing parents to allow treatment of their children. Some school dentists believe in removing all those deciduous and pain-producing teeth which have, or may in the immediate future, become an impediment to efficient mastication, relying upon the improved condition and the promise of greater development of the jaws obtained thereby to prevent further decay resulting, and to promote the arrest of any existing superficial caries on the masticating surfaces. Others allow to remain even loose and necrotic roots of deciduous teeth but carefully search for and fill even the smallest suspicion of a cavity. Some combat the pain of extraction by means of local injection in nearly every case, while others almost invariably employ general anæsthesia. There is the school which believes in thoroughness and quick completion with its almost necessary concomitant of pain and unpopularity versus that which advocates avoidance of pain and fatigue the consequent popularity among the young patients being the primary consideration. In a number of clinics parents not only have to sign forms sanctioning treatment but have also to be present in the room during the actual treatment. Personally I think that these two conditions are grave mistakes—parents of the particular class with which we have to deal hate putting their signatures to any document whatever, and it is a fact that the presence of a mother in the room only increases the "wind-up" of both operator and patient.

The appointment of a Director of Dental Treatment to the Board of Education and Inspectors to the various County Education Authorities is inevitable and will no doubt be the means of producing the uniformity required.

The second and greater disability with which the project is encumbered is that present conditions are not conducive to dentists, and especially the most able, becoming school dentists.

To be compelled to pass years of one's dental life without having the opportunity of dealing with, and adding to one's knowledge of, dentures, crowns and bridges, so essential for successful private practice, to gain no further insight into the problems of adult tooth tissues, are reasons sufficient enough.

It is essentially a blind-alley occupation which causes us furiously to think whether or not we may possibly find some outlet.

In view of the fact that work can only be done for children normally during school hours, which means that some portions of the year (being school holidays) and the whole of the evenings are unavailable for actual work, is it not possible within the region of practicability that school dentists might be allowed to devote this time, should they so desire, to assisting a local dentist in his private practice—the usual safeguarding guarantees being arranged between the parties?

It must also not be forgotten that the constant treatment of children day by day is a nerve-racking occupation upon which one is not disposed to enter lightly.

In addition, dentists have to undertake a large amount of only semi-skilled work which occupies a considerable proportion of their time, this acting not only as a deterrent to accepting the position but also influencing so largely the question of salary.

Strangely enough the methods by which it has been proposed to effect an amelioration of these latter conditions enumerated is opposed by nobody except by the organized body of the profession itself. The one remedy by which it is hoped to raise the status of the school dentist, make him more a specialist, give him the help of which he is so much in need, cause him to have an adequate salary instead of the pay of a hack, and, most important of all, make it practicable for the six million children concerned to have proper dental treatment within reasonable time, is being attacked most bitterly by the rulers of the dental profession. I refer of course to the employment of women dental nurses or dressers. Let me state as concisely as possible the way in which the services of these women can be employed for the betterment of everyone concerned. I think I am correct in stating that fully one quarter of the time of a school dentist is occupied by the spade-work of examination. All the children in a

school are examined by him and the state of their mouths recorded by an assistant on duly prepared cards as to the number of temporary and permanent teeth which are sound, savable, and unsavable.

Those with perfect mouths do not come up for treatment later, but ultimately all the others do. His examinations then have, so to speak, separated the wheat from the chaff, and have also been the means of compiling materials for statistics and that is all. One trained woman dental dresser can, in conjunction with the school teacher, separate the wheat from the chaff for him quite effectively by marking down the children in the following categories: (1) No treatment required; (2) probably extractions only; (3) probably fillings only; (4) probably both extractions and fillings; (5) other conditions probably requiring treatment. She is instructed to include amongst those for treatment any mouth possessing any deviation from the normal, any conditions of dirtiness, presence of tartar, or indication that the child is not using its powers of mastication, and all cases of open bite and overcrowding.

That rough initial classification having been obtained, one is in a position to arrange one's daily work by bringing up for treatment, extraction, or filling, cases as one desires, according to the time required by each. One quarter of the dentist's time has been saved by this means for actual work, the only thing lost by this system being material for possible statistics—no great loss, however, as figures do not preserve the teeth.

I know that it will be said at once that all this is highly specialized work which should only be undertaken by a fully-qualified man, but I beg you to bear in mind that I am speaking of a properly instructed and highly-trained woman who has been working in a clinic under supervision for some time, who probably has seen more children's mouths than the average young newly qualified dentist has observed during the whole of his hospital life. Also that she can be checked by the almost constant percentage of children passed for treatment and by the dentist himself occasionally undertaking the inspections. Suppose she marks for treatment some children who do not need it—that is a mistake on the right side. Suppose she fails to bring up one child who should have had treatment out of every 5,000 inspected, can one put that against the fact that one quarter of the dentist's valuable time has been saved, coupled with the probability that he himself, especially if newly qualified, would do no better?

Later, when the children arrive at the clinic for attention quite a large proportion of the treatments, especially amongst the younger children, in whom the healthy environment of the erupting first molar is the prime consideration, consists in the removal of the loose and often necrotic remaining portions of the deciduous teeth. Does it need a man

deeply versed in the ultimate ramifications of the odontoblastic processes to perform this simple feat? The filling of shallow cavities, especially fissure cavities, scaling and cleaning—is there any one who can honestly contend that a trained woman cannot do these things as well as any man, no matter how great his knowledge of the ornithorhynchus or the duck-billed platypus?

Then we come to the question of dressings. Why should I not, on inspecting a cavity and finding an exposed pulp, say to the dental nurse: "Just put an arsenic fibre dressing in this tooth." Or again, why should I not say: "Take the dressing out of the tooth for me, please, so that I may see what measures to adopt." Does not the surgeon instruct the sister to foment an abscess, and both apply and remove stitches and dressings? Anybody who would make the statement that a dental nurse cannot do these things properly is logically bound also to assert that a trained nurse is not capable of performing these acts, or of assisting in the every-day work of a minor surgery under the supervision of a doctor or surgeon as is the present custom.

So much for the actual time saved and the assistance gained. One has quite enough to do oneself, for, besides responsibility and supervision, one has the extraction of all permanent teeth, and all the filling and dressing of root canals, while the administration of anæsthetics, both local and general, is in one's own hands.

Whilst mentioning the subject of anæsthetics. I feel compelled to point out that I once visited a school dental clinic where the dentist was not allowed himself to give nitrous oxide, but had to suspend work and restrain his ardor until a member of an evidently superior profession, whose specialty was the eye, was at liberty to come down from upstairs to attempt to induce that mixture of anæsthesia and asphyxia so dearly loved by general practitioners. I do not profess to know whether this procedure is general, but I should advise school dentists to refuse to accept a position no matter what the salary might be which places them in such an undignified and unfortunate position. That is, however, by the way. Another point which I must bring forward is the undoubted fact that children yield themselves more cheerfully and readily to a dental nurse than they do to a mere man. Accustomed as they are to the tender ministrations of women they regard their treatment by women as quite every-day and normal, so that fright and "wind up" are reduced to a minimum. Having had the privilege of training and working with two dental nurses I am in a position to make that definite statement, which, however, I know cannot be accepted until many more dentists are able also by experience to give corroborative evidence. This means a great gain in the efficiency of a clinic.

The employment, therefore, of trained dental dressers under supervision of school dentists, who would themselves be doing more specialized and important work than at present, is put forward as a solution of the problem of how the 6,000,000 children shall have, in the near future, amelioration of their dental condition.

What alternative have the opponents of the scheme to offer?

So far as I can see it is that the children should be left, as at present, at the mercy of the septic hypodermic needle and forceps of the great unregistered, until hundreds of young men, attracted by the large pay and pleasant calling of the school dentist, shall pass through the four years' curriculum and ultimately emerge perfect (by examination) tooth preservers to the patients in the primary schools.

Or is it that those who cavil have in mind the utilization for school work of the numerous unregistered who will probably be taken shortly under the wing of the profession? There are so many obvious reasons why that course is impracticable, and for the sake of the children inadvisable, that the suggestion is not worth pursuing.

Of what are the opponents afraid?

They speak about the "thin end of the wedge." What is the thick end of the wedge? Do they mean that the dressers may ultimately compete in civilian practice? It is not easy to see how this could be. In the first place the dressers are bound down in their contract not to do this, and in the second place their training is so limited that, ignorant altogether of dealing with the dental conditions of adults, unable to make or fit a crown, bridge, or denture, one cannot imagine them becoming great successes. Even if a few of them do practise illegally, so do a few medical and surgical nurses. Does any one suggest, therefore, that surgical nurses should never have existed? Or is it that "the thick end of the wedge" is thought to be that there will be fewer dentists employed in the School Dental Service in the future than would otherwise be the case? That is no doubt true, but each dentist would be sound in status, usefulness, and salary, and not a penny-in-the-slot tooth machine.

In conclusion, I beg to suggest humbly that there is only one aspect of the problem worth considering, and this should be looked at regardless of the vested interests or prejudices of any particular class. This is stated simply: "How can we best and most quickly come to the rescue of the health of the nation?"

CONDUCTIVE ANESTHESIA AND EXODONTIA

By D. P. Snyder, D.D.S., Exodontist, Columbus, Ohio.

Instructor in Exodontia and Radiography, Dental Department, Ohio State University

We are indeed living in a nervous, hysteric, and competitive age and our patients daily become less fit to tolerate pain which their ancestors bore with ease.

This demands from us the abolition of pain in dental operations, if we would conscientiously heed the cry that has gone forth so loudly within the civilized world within the last decade, "save the human teeth." For who would deny that the destruction of these most essential, most vital organs in the human economy, has assumed most alarming proportions, and that we dentists, if we really wish to live up to the importance of our profession in regard to social economy, must have recourse to all possible means to inhibit this universal disease.

Thus, the plea for efficient dentistry becomes identical with that for humanitarian dentistry. It behooves the ethical dentist to make his operations painless by mastery of anesthetic technic, thereby competing successfully with a most unfair competitor (the quack), saving his patients' nerves, incidentally, also, his own, and banishing forever that dread and fear of the dental office which seems to inhere most persistently in the vast majority of patients, and which is in a large measure responsible for the appalling ravages of dental caries in all classes of civilized society.

The advantages of N_2O and O anesthesia in the routine practice of the exodontist, after having been tested for decades, needs no introduction. In certain specialties of dentistry, however, notably the operative branch, in which efforts have been made to combat pain by the application of N_2O and O analgesia, a reverse of the tide has been experienced, and a great many practitioners have been inclined to disparage its value.

It may not be amiss once more to emphasize the fact that successful, safe, and expedient exodontic practice could hardly be carried out successfully without the benefit afforded by this technic.

Any one familiar with the daily application and the administration of this form of anesthesia knows that there is no safer, more convenient and practical general anesthetic available. Patients of highly excitable, neurotic temperament, especially appreciate this means of being relieved from one primal instinct—fear. To them N_2O and O anesthesia appears as a blessing that relieves them from any extraordinary efforts of will, or the extremely untoward results of mental and surgical shock.

It is the highest and lowest types of patients who regard the artificial induction of sleep as a most blissful means of passing through a surgical experience—that is, an extraction—which by the overwhelming majority of laymen is still looked upon as one of the most disagreeable experiences and one of the most regrettable manifestations of the weaknesses to which the human flesh is heir.

While we acknowledge all of the wonderful benefits accruing from this anesthesia, we would be remiss in our duty toward the patient were we to proclaim N_2O and O anesthesia as suitable in every case in exodontic practice. It repeatedly has been acknowledged by men of the widest experience in its administration that this method, in certain cases, entails certain difficulties, and indeed contra-indications, which militate against its routine application in every case. Men familiar with it are not over-enthusiastic about experiences with patients of alcoholic or drug habits, with cardiac, diabetic, arterio-sclerotic, nephritic and tubercular conditions.

In the mind of the conscientious operator there looms always a fear that there may be present in a patient who is in apparently perfect health, with normal pulse and respiration, a hidden aneurism, which, under the inevitable rise of blood pressure, may give way and terminate the life of the patient who is doomed anyway, sooner or later, under circumstances apparently incriminating the operator. Upon the other hand, it is the natural ambition of every exodontist whose aim it is not only to get the tooth out but to perform a clean surgical operation, to apply his surgical skill in such manner that the patient's interest will be best served, and that the operative dentist, the crown and bridge worker, and especially the prosthodontist, have their patients return to them exhibiting a condition of the mouth favorable, in fact, ideal under the circumstances, for proper restorative measures.

There are a great many cases in which the exodontist would have to prolong the N_2O and O to such an extent as to invite consequences detrimental to the patient's systemic health. Crile has convincingly demonstrated that prolonged general surgical anesthesia entails the destruction of a certain number of cells of the brain, of the adrenals, and of the liver, and the conscientious anesthetist should employ every means to counteract the risk of shock by the selection of the anesthetic most suitable to the patient's social, mental and physical status. There are patients to whom the idea of being put to sleep by artificial means is equivalent to the risk of life; others will suffer for an inordinate length of time from post-operative nausea and shock. Others, again, present a condition requiring surgical intervention of prolonged duration of such a nature as to render the application of a general anesthetic impracticable

and contrary to the best surgical judgment. It is in these cases that the patient's interest and the operator's efficiency are best served by the application of conductive anesthesia.

The adoption of local anesthesia by novocain, which for many years has been practised generally in Great Britain, has been especially dilatory and cautious in the United States, seemingly for three reasons: *First*, the injudicious employment of cocain and proprietary secret cocain preparations by unethical painless dentists, which have inspired the public and the ethical practitioner alike with a fear of the utilization of that treacherous alkaloid; *second*, frequent failure due to the lack of appreciation of the physiological and anatomical relations upon which all methods of this specialty are based, and of the imperative necessity of asepsis of solution, apparatus and the region to be anesthetized; *third*, a partiality to general anesthesia, apparently justified by the remarkable development of N_2O and O anesthesia and analgesia in this country.

The relative merits of N_2O and O and novocain-suprarenin local anesthesia, however, are close at hand, since local anesthesia has, within recent years, found enthusiastic advocates among both the medical and dental professions, as men like Crile and Mayo.

The increase in popularity of local anesthesia over general anesthesia is due, besides its incomparably greater safety, absolute certainty of insensibility, and facility of operating, to three factors:

First: The admixture of suprarenin preparations to the anesthetic solution, by which absorption of the anesthetic into the circulation is retarded, the depth of anesthesia is increased, and anemia in the field of operation is insured.

Second: The substitution for cocain of far less toxic, more stable and uniformly effective, sterilizable, and non-habit forming synthetic products, among which novocain is given preference.

Third: The perfection of the method of infiltration and conductive anesthesia.

The simplicity of the technic of infiltration and conductive anesthesia is within the reach of any one familiar with the anatomic relations upon which it is based.

The quality and duration of the anesthesia obtained are such that the most complicated and extensive surgical operation can be performed without the patient experiencing any pain whatever, and with a certainty that the first acute post-operative pain will be relieved by the anesthesia which persists for an hour or two following the operation. There is no danger of the patient swallowing blood or fragments of tissue, and any change in position which may be helpful to the operator can be executed readily by the patient himself, as he is not deprived of any of his mental

or motor faculties except the sensory peceptions within the blocked area. The patient leaves the operating chair without the necessity of resting, or administrations toward resuscitation, and can be given full and clear instructions as to the post-operative treatment by which he may himself hasten the healing process or render it uneventful.

REQUIREMENTS OF AN IDEAL LOCAL ANESTHETIC

First: The substance must be less toxic than cocain.

Second: The agent must not cause the slightest irritation or tissue injury but must be absorbed from the place of application without any secondary effects, such as severe hyperemia, inflammation, painful infiltration or necrosis. Only when these conditions are fulfilled can we assume that the healings of wounds will not be interfered with.

Third: The agent must be soluble in water and its solutions stable and possible of sterilization by boiling.

Fourth: It must be possible to combine the agent with suprarenin without interfering with the vaso-constrictor power of the drug.

This list represents a severe condemnation of cocain and its admixtures. With the rapid extension of the use of cocain and its admixtures, certain disadvantages became apparent; pronounced toxicity, and the fact that cocain solution cannot be sterilized by boiling.

The symptoms of cocain intoxication in cases of idiosyncrasy are truly formidable, the effect of this drug on the heart, nerves, and the kidneys are very undesirable. Moreover, the habit-forming property with its sinister sequelae of pathological and moral degeneration reveals such a serious aspect that even legislative measures had to be invoked to protect society against cocainism.

As the chemical nature and its physiological action became understood the next aim of research was to produce a synthetic preparation possessing the anesthetic properties of cocain without the disadvantages attending its use. A great many cocain substitutes and admixtures are highly toxic, they have other untoward properties and generally produce hemolysis of the human blood corpuscles. The large majority of these drugs are proprietary preparations.

From a merely practical point of view it should be remembered that the price of these proprietaries is too high in comparison to their efficiency, and the mystery in which the manufacturers shroud the composition of their products, puts the operator at a great disadvantage medico-legally in case of suit for damage following any accident.

Any antiseptic strong enough to keep the solution stable will result as a tissue irritant. Pharmacologists and chemists have discovered that

an ideal local anesthetic can be synthetically prepared, the diethyl-aminoethanol-ester-p-amido-benzoic acid, or novocain, being the most satisfactory.

It lies outside the scope of this paper to repeat the anatomic description of our field, except to touch upon a few of the most important points which will be explanatory to my clinic. Any textbook on anatomy or local anesthesia will offer ample information on this subject.

INFILTRATION

The maxilla, owing to the liberal distribution of the cancellated areas throughout its superficial cortical layer, both facially and palatally, lends itself most favorably to infiltration anesthesia, allowing the ready anesthetization of each individual upper tooth, at any age.

In the mandible, the cortical layer prevails, increasing in general distribution and density with the advance of age, so that infiltration anesthesia is uniformly successful only in children up to 12 years of age, while in persons above 12 years this method is applicable only for the anesthetization of the centrals and laterals, the osseous environment of which to some extent retains its cancellated character.

The mandible, therefore, may be said to be the field *par-excellence* for conductive anesthesia, especially since it is difficult to make an injection in the lingual surface, owing to the continuous interference by the tongue and the continual inundation of the field of injection by saliva from the sub-lingual gland.

Infiltration anesthesia is best accomplished by using the needle 23 mm. After some practise, the operator will acquire sufficient skill to enable him to use a longer needle.

The point of injection is half way between the cervical margin and the probable root apex of the tooth, mesially to the long axis, as nearly at right angle as possible to the bone. After a drop is injected the needle is pushed forward as the field becomes anesthetized, keeping in contact with the bone until the apex is reached. The advance of the needle must be very slow, else a wheal or balloon will rise. If this occurs, it must be distributed immediately by the index finger.

The description just given of the technic of infiltration anesthesia applies to anesthesia for dental purposes, the extirpation of the pulp, excavation of hypersensitive dentin in cavity preparation, and the preparation of vital abutments in crown and bridge work.

This labial or buccal technic anesthetizes the nerve leading to the tooth, the alveolus, the pulp of the tooth injected, and the periosteum of the labio-buccal side. In order to obtain complete surgical anes-

thesia, sensation in the palatal and lingual and mucous membrane, and periosteum as furnished in the maxilla by the posterior and anterior palatine nerves respectively, and in the mandible, the lingual nerve, must be abolished.

Infiltration anesthesia is by no means easier than conductive anesthesia. The injection requires a much longer time, liability to causing some pain and tissue lesions, hence after-pain. Moreover, the danger of injecting into a hidden focus of quiescent chronic infection is ever present. Therefore, rather than run the risk of spreading such local infection, conductive anesthesia should be resorted to in cases suspected unless a roentgenogram guarantees the presence of normal tissue.

While infiltration anesthesia is essentially of a terminal or peripheral nature, conductive anesthesia aims to intercept or block at a convenient point a sensory nerve before it reaches and distributes itself in the area which its branches supply. For our purposes, fortunately, it is unnecessary to carry our solution directly into the nerve trunk, since the nerve branches in our special field are slender enough to absord and conduct the novocain and suprarenin solution.

Our solutions are laid in the vicinity of the foramen with a liberal superlayer of fatty connective tissue to which the nerve as well as any blood vessel has ample space to escape unless the needle is inserted with an unduly fast stabbing motion.

BRIEF DIRECTIONS FOR CONDUCTIVE ANESTHESIA—FORAMEN—ANATOMIC LANDMARKS—ADVANCE OF NEEDLE—QUANTITY OF SOLUTION

Maxilla: *Zygomatic Surface.* The posterior and middle superior dental foramina located upon the zygomatic surface giving passage to the posterior and middle nerves, innervating soft tissues facially, bone and pulp of the first, second, third molars, and first and second bicuspids.

The needle is inserted in the reflection of the mucous membrane over the molar teeth and advanced on bony surface, without discharging solution, in an upward and inward direction.

When the needle is inserted the full length, a deposit of the solution is made. If the bicuspids are to be anesthetized, 1 cc. of solution is discharged as the needle is withdrawn. Quantity of solution, 2 cc.

Infraorbital foramen, emitting anterior superior dental nerve, innervating soft tissue facially, bone and pulp of the central, lateral and cuspid: Palpate lower border of the orbit on face, press index finger over infraorbital foramen; needle inserted in reflection of mucous membrane distally to cuspid root; advance needle until felt by the finger, pressing the solution in the foramen while injecting. Quantity 1 cc.

Mandibular foramen, in the internal surface of the ascending ramus, giving entrance to mandibular nerve, innervating soft tissue in bone and pulps of all teeth from the third molar to central incisor. From first bicuspid to central incisor, however, innervating by anastomosis from the opposite side must be considered and abolished by injecting at mental foramen on opposite side. The index finger is placed in the post-molar or retro-molar triangle. Needle inserted about 1 cm. above the last tooth or the middle of the finger nail, in children lower, old age higher, barrel resting in the vicinity of the bicuspids on the opposite side. Needle is advanced whole length before injecting. Quantity 2 cc.

Mental foramen, located beneath and between the roots of the first and second bicuspid, gives exit to the mental nerve supplying the soft tissues of the chin and the mucous membrane of the lower lip. By pressing the solution into the foramen, anesthesia can be obtained from bicuspid to bicuspid. Quantity 1 cc.

The buccinator nerve supplying the buccal mucosa with sensory fibers sometimes remains sensitive after the mandibular injection. Insert needle in region of buccal of third molar and inject a few drops.

A FEW PRECAUTIONS

If all requirements of asepsis in connection with the anesthetic solution, the instrumentarium, and the field of operation have been satisfied, no untoward sequelæ of any kind will follow the injection, if it has been made into healthy tissue.

Injection in close proximity to a purulent centre must be avoided in all cases, since virulent bacteria may be carried into deeper layers. In cases of severe inflammation or abscesses, conductive anesthesia must be resorted to. Pain from secondary infection, due to faulty oral hygiene, must not be charged against local anesthesia.

PREPARING THE FIELD OF OPERATION

Before making an injection in the mucous membrane, the mouth must be put into a sanitary condition as far as possible, or at least in the vicinity of the field of operation. The area around the prospective point of insertion of the needle is swabbed vigorously with a sterilizing agent, preferably Riethmueller iodin solution, which is composed of iodin ten parts, menthol ten parts and benzole U. S. P. 80 parts. Due to the tingling sensation of the solution the patient is not aware of the insertion of the needle.

Heretofore, very little attention has been given to the removal of all

foci of infection from chronic and blind abscessed teeth or roots. The cystoid, if small, usually is attached to the root upon its removal, but if it is large it will rupture and remain in the socket to carry on its work of the discharging of toxins. These areas have been discovered by the Roentgenograms and are found to be destroying bone tissue for an indefinite period after the tooth has been extracted.

Unnecessary laceration and destruction of both soft and hard tissue delaying the reparative and restorative measures, irregular process, retained spicula, exposed process, all of which delay fitting of bridge work, not to mention how difficult it is to place partial or full denture over an irregular ridge. Lack of comfort from these dentures oftentimes hastens the patient to come to the conclusion that bridges and dentures were not properly fitted.

There are other advantages of local, or conductive anesthesia in which plenty of time is given to examine each and every root for cystoids, or to carry on extraction where complication may arise, remove spicula, remove or protect exposed process, to cut away large interproximal septa, and remove any tissue where the circulation will be arrested.

Enough has been done in this field to show definitely that the method of local and conductive anesthesia as described can be employed with safety and success, and will be very valuable toward greater efficiency in dental practice.

Local and conductive anesthesia never was intended to replace general anesthesia but to supplement it. What we must guard against is a biased exclusiveness toward one method or the other, since the special indications determine the choice of the anesthetic from case to case.

In conclusion, I may say that conductive anesthesia by novocain-suprarenin injection surely deserves a thorough trial by every dentist, and it will prove a boon if the precautions mentioned are observed and the technic of injection is mastered. It always must be our aim to serve the best interest of our patients, and to make accessible to them the methods of combating pain most suitable to the individual case, and most certain to guarantee the best results.—*The Dental Summary.*

NOTES OF A PECULIAR CASE OF EMPHYSEMA

By Alex. Kirby, L.D.S., Eng.

A. F. G., aged 47, was under my care with regard to his teeth, and I advised him to have a right central incisor crowned. The tooth was very much worn down by attrition owing to the fact that he had for a long while been without back teeth, and had used his incisors as masticators. The tooth was worn down below the cingulum and there showed a ring of secondary dentine in its central portion. A thin plate of enamel in front, which was so thin as to be transparent, had been broken across transversely and the closeness of the bite forbade the possibility of any restoration by filling.

I therefore excised the tooth and removed the pulp which was somewhat unusually long and its apical end was hard, in fact almost cartilaginous. I fitted down a mineral tooth and took an impression in inlay wax and made a crown with a cast gold backing which fitted the root well, and I then put a dressing into the root with the intention of fixing the crown the next day (December 24, 1917).

On his visit to me on that date I removed the dressing, and the root began to bleed rather freely I dried it out with a wisp of cotton until I had somewhat checked the bleeding and continued to dry it with fine paper points. When I inserted one I found it passed freely through the apical foramen for a very long distance and I at once concluded that the foramen must be much above the normal size. After I had got the root fairly dry, I commenced to get it thoroughly dry with a hot air syringe attached to the Dental Manufacturing Co.'s electro-pneumatic apparatus. I had scarcely begun to inject hot air when the whole right side of the patient's face filled out like a blown up balloon and he had all the appearance of a person with very severe alveolar abscess, under his eye, the whole cheek, and under the jaw being much enlarged.

There was no swelling of the mucous membrane which remained close to the bone, the swelling being entirely subcutaneous. Another peculiar circumstance was that the swelling was strictly unilateral and did not extend to the left side of the columella of the nose, or the symphysis of the chin.

I at once extracted the root as I saw no chance of putting on the crown I had made, and found the end of the root much absorbed and with a very large foramen. The case went on well, and after two or three days no sign of swelling remained.

How the air can have got up under the skin I cannot see, but there must have been some sort of a sinus from the end of the root to the base

of the nose. I described the case to a medical friend of mine and he told me the symptoms are identical with those found in a prize fighter who gets a broken nose and attempts to blow it, when the air from the lungs is forced through the rather flaccid tissues under the eye and thence subcutaneously through the cheek, etc. As far as I can hear or have read the case is unique, and I shall be very interested to hear if a similar case has come under the notice of any member. As the patient was wearing a plate it was not difficult to correct the deformity caused by the loss of the tooth. I much regret that I am unable to show you the root, which I had put aside to save, but during a few minutes' absence my maid cleared away the things in my room and the specimen was thrown into the fire and lost.

Note by W. H. Dolomore.—Privileged as a member of the Editorial Committee to see the proof of Mr. Kirby's communication, I may perhaps be allowed to add a note. The accident in its essence is not so unique as is suggested. Once when on the staff of the Throat Hospital I was asked to drill into an antrum—one of many such requests—and having done so, as I supposed, I proceeded to wash out the cavity with a weak solution of boracic acid. Often a clot of blood, pus, etc., blocks the opening into the nose and some force is needed to dislodge it. So it seemed in this case, but no fluid came through, and on moving my hand I saw I had blown up the cheek and the loose tissue beneath the lower eyelid. The out-patient sister said she had seen it happen before, and that it slowly disappeared. So it did in my case. What might have followed had I used a caustic fluid I do not like to think, and it has warned me never to do so for the first irrigation. One can never be quite sure one has not perforated the facial surface of the maxilla, or that an opening did not previously exist.—*British Dental Journal.*

PHYSICAL AND LABORATORY DIAGNOSIS FOR DENTISTS

DR. HALTON, CHICAGO

Excerpts from address before the Toronto Dental Society

No one contribution to the practise of dentistry and medicine has turned the attention of people in general more to the teeth and investing tissues than that of the theory of focal infection. This operates in two ways: In the first place it increases the responsibility of the dentist, and, therefore, in the second place, it invests his profession with a new dignity and rating higher than formerly assigned to it. Greater things are expected of the practice of dentistry than merely the maintenance of the masticating machine, or in a common phrase, "running a mouth repair shop."

With this broadening of the field there is a tendency to hold the dentist more and more responsible for methods and information that formerly were more or less exclusively those of the physician. To a

certain extent this is more true in the field of diagnosis than in any other branch, and it is to this field that I am going to limit my scrutiny tonight. I am going to be concerned with the reasons why dentists should be familiar with diagnostic procedures, and not only that, but with their actual performance in certain cases.

There are a number of factors that thrust this matter of physical and laboratory diagnosis on to the dentist, and they are as follows:

First, the matter of anæsthesia. No anæsthesia, even that of a local one, is without some danger, and that danger is materially increased in certain forms of physical disability. As dentists we are very much interested in avoiding untoward results in our anæsthesias, and complete and ultimate success in this proposition is dependent on information that can only be gotten by some form of physical or laboratory examination.

In the second place, as I have already suggested in the preceding statements, the relationship of mouth infections to disease elsewhere in the body has sharpened our interest in disease manifestations outside of the mouth. In spite of himself the dentist is obliged to take an interest in what is going on in the organs and tissues of the body in general. To do this properly he is dependent on the methods of physical and laboratory diagnosis.

The third reason results from the preceding two. Let us call it the medico-legal relationship of the dentist. We are facing new social and legal institutions that have to do with a multitude of factors, such as Workmen's Compensation Acts, many forms of accident and health insurance, school inspections, and preventive medicine and dentistry. As a result of the theories of the relationship of mouth infections to disease elsewhere in the body your examinations and the records that you keep of them are of prime importance in the settlement of such cases.

In the fourth place, dentists are being more and more called into consultation with internal medicine men and other specialists in the so-called group study of cases by which it is expected to arrive at a more refined diagnosis and outline a more satisfactory and scientific course of treatment.

In the fifth place, the war is a large factor, but it is hard to determine just how and where it belongs. It is possible to say that large numbers of our young men have had experiences and contacts that will influence all professions and all forms of legal and social activity to unknown degrees for years to come. Medically and surgically (and this includes dentistry they have seen, and in a large number of cases have actually experienced the beneficent results of various forms of professions, co-operation and activity). Hospitals, infirmaries, and dental practices of the highest types are familiar to them. They will undoubtedly attempt to "carry

on" in civil life such activities as seem to them worth while. They will have become familiar with many of the commonly accepted examinations, medical tests, and procedures. Their standards will be more or less fixed by what they have seen and heard during these new contacts.

I am convinced that a dentist must be familiar with the methods of physical examination in general use in order to do his part in this great work to his greatest advantage. Some he should know how to perform, others he should know the interpretation, but not the details of the performance; there is a third group which he should be able to understand in a general way, and finally a fourth about which he need be concerned not at all.

At the time of the first presentation of the patient not only should an exact examination of the conditions existing in the mouth be made, but this should be spread to a general estimate of the individual. Any apparent deviation from the normal in these general respects should have a rather careful attention, etc., and, if possible, related to the mouth conditions found. Apparently Barker's (4) classification of the items that are to be included in such an examination are more than sufficient, and it follows:

1. Body temperature, pulse rate at both wrists, respiration.
2. Height, weight, relation to average calculated weight, nutrition, musculature.
3. Posture, gait, behavior.
4. Skin.
5. Hype trophied glands, bones, joints, muscles.
6. Blood pressure.

Except item 6, these are those that are familiar to all of us, whether professional or laymen, and very nearly correspond in many points to those covered by the army examinations. There are three things I should like to emphasize, for I believe a careful record of them concerns the work of dentists. The first one is temperature, the second is nutrition, and the third is pulse rate. The reasons for the first two are obvious. There is always a possible connection between temperature and some dental condition, and this is also true of nutrition. Recently in examining young men of draft age I have been astonished at the large number of rapid pulses. There was only one other factor that presented itself with the same regularity, the equally striking number of defective teeth. Of course, it is pushing the mere fact of coincidence pretty hard to say that there is here any relationship of cause and effect. There are other factors to exclude first, but even after those of excitement, the influence of tobacco, and such intoxications as goitre are ruled out there is remaining a very considerable number still unaccounted for, and which have

been allowed to go to the cantonments for the army surgeons to dispose of as they see fit. These men belong to a group known as "irritable hearts." Occasionally they have been discussed under the heading of "Soldier's Heart, or Irritable Heart of Soldiers." This rather large group concerns dentists, because it has been found repeatedly, and by repeatedly I mean, by many observers at different stations, that such hearts are in a large number of cases susceptible to a treatment that consists of just two things: (1) The removal of a focus of infection possibly about the mouth and teeth, and (2) graded exercises.

Blood pressure is a measurement that can be easily taken and should be a familiar technique of dental offices. It offers information in two classes of cases. One group is covered by the pre-anæsthetic, pre-operative use of this test. The other as a means of verifying a possible effect of focal infection.

The examination of the body may be grouped either by regions or by systems. The examination of the various systems as such seems to be quite out of consideration, except in so far as it concerns the respective specialties. On this account for our purposes the regional division is much more satisfactory. The examination of the head region should be thoroughly comprehended by the dentist, for this includes his chosen field and the region just adjacent to it. He should not be held responsible for the examination of the special senses, nor of the nervous system. But the conditions of the adjacent structures, the tonsils, the glands of the neck, the tongue, the accessory sinuses of the skull bones all have some possible connection with his work. This includes such special methods as transillumination and the use of simple electrical apparatus.

The examination of the chest region holds two points of interest, the heart and lungs—especially the former. I am sure that it is not fair to expect that a dentist will become expert in the use of a stethoscope so as to distinguish the finer chest sounds; that he will be able to percuss with any great ability; but I do believe that he can locate the apex beat, and that he can learn to distinguish with the stethoscope between the sounds that certainly are those of a normally acting heart and those of one that is the seat of some unusual sound. Then having gone so far as to determine that some defect does exist, he can insist that his patient must have a physician's examination and recommendation before he will be allowed to submit to an anæsthesia, or to the removal of a large number of teeth, or in an elderly person or invalid the removal of even a single one.

The actual performance of laboratory tests is a matter of technical skill that can be mastered by a laboratory technician who need not be

either a doctor or dentist. Often nurses make very capable technicians, and do the work even more faithfully and conscientiously than their professional teachers. They cannot interpret the tests, but that is often an advantage. It is, therefore, possible to make one laboratory supply a considerable group of men, both dentists and physicians, a laboratory that will do a large amount of work reliably and at a rather small expense, provided there is at least one individual member of the group capable of training and supervising the technical assistant.—*Dominion Dental Journal.*

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FUTURE EVENTS

The Nineteenth Annual Meeting of the American Society of Orthodontists will be held in St. Louis, Monday, Tuesday, and Wednesday, March 10th, 11th, and 12th, with headquarters at the Planters' Hotel. An excellent program is assured.

F. McCASTO, *Secretary*, 458 Rose Bldg., Cleveland, Ohio.

Announcement of the Clinic Committee of the Missouri Dental Association at Statler Hotel, St. Louis, Mo., April 14th, 15th and 16th, 1919.

The clinic program for the fifty-fourth annual meeting of the Missouri Dental Association promises to be an unusually interesting and profitable one.

Wednesday afternoon, April sixteenth, has been set aside for our table clinics. Special features have been arranged by which you can see your favorite clinic without confusion.

All clinics must be handed in before March twenty-fourth. If you have not done so, mail the title of your clinic at once to

CHARLES P. GROSBY, *Chairman*, Frisco Bldg., St. Louis, Mo.

The annual meeting of the Iowa State Dental Society will be held in Des Moines, Iowa, May 6, 7, 8, 1919. An interesting program has been arranged. Men from out of the state holding National cards are cordially invited to attend all sessions.

For further information address,

Dr. E. R. SWANK, *Sec'y*, C. N. B. Bldg., Des Moines, Iowa.

The fiftieth Anniversary—Jubilee meeting—of the Kentucky State Dental Association will be held at Louisville, Ky., June 9, 10, 11, 12, 1919.

A Post Graduate Course of unusual interest has been planned.

Address all correspondence to

W. M. RANDALL, *Sec'ty*, Louisville, Ky.

The District of Columbia Dental Society will hold a Post Graduate Clinic and Manufactures Exhibit at Washington, D. C., March 18th, 19th, and 20th, 1919. The subjects to be considered are Root Canal Technic, Plate Work and Bridge Work. Clinics will be held 19th and 20th, at Hotel Harrington, and will be open to subscribers only. Papers will be read 18th, 19th, and 20th, at George Washington University, and will be open to all ethical practitioners.

DR. ARTHUR B. CRANE, *Pres.*, 1424 K St. N. W., Washington, D. C.

The next meeting of the Vermont Board of Dental Examiners, for the examination of candidates to practice in Vermont, will be held at the Statehouse, Montpelier, commencing at 2 P.M., on June 30th, 1919, and continuing for three days. To be eligible for examinations a candidate must be (1) twenty-one years of age, (2) a graduate of a high school of the first class, and (3) a graduate of a reputable dental college.

Applications must be in the hands of the Secretary not later than June 1st.

HARRY F. HAMILTON. *Sec'y*, Newport, Vermont.